MINES AND QUARRIES

CHAPTER 16.—STATISTICS OF MINES AND QUARRIES FOR INDUSTRIES AND STATES.

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Introduction.—This chapter contains a summary of the statistics of mining for the United States for the calendar year 1909, as shown by the Thirteenth Census.

The statistics relate both to mines in the narrower sense and to quarries and petroleum and gas wells, but for brevity all these enterprises are often called "mines," using the term in its broad sense.

The principal statistics of mining industries derived from the census inquiry are given in a series of general tables at the end of the chapter. Table 25 gives a comparative summary of the results of the inquiries of 1909 and 1902, comparing for each geographic division and state the expenses of operation and development, the primary power, and the value of products. Table 26 gives a similar comparative summary for each industry. Table 27 gives for the several geographic divisions and for each state the number of operators; the number of mines, quarries, or wells; capital; expenses of operation and development; number of persons engaged in the industry; acreage of land controlled; primary power; and value of products. Table 28 gives similar information for each industry. Table 29 gives information similar to that contained in Table 28 for nonproducing mines, quarries, and wells, in which operations are as yet confined to development work.

The explanatory text deals almost exclusively with the producing mines, quarries, and wells, and gives for all mining industries combined and for a number of the more important industries separately further statistics amplifying the figures given in the general tables, together with averages, percentages, etc., derived from the figures in those tables.

In order to avoid any misapprehension as to the significance of the statistics here published, it seems advisable to offer a few brief explanations of the terms used in the census of mining industries.

Scope of census.—The Thirteenth Census covered all classes of mines and quarries that were in operation during any portion of the year 1909, both those which were producing and those whose operations were confined to development work, and petroleum and gas wells that were in operation at the end of that year. Mines, quarries, or wells that were idle during the entire year 1909 were omitted from the canvass. The following operations were likewise omitted from the canvass: Prospecting; the digging or dredging of sand and gravel for the construction of roads and for building operations; the production of mineral waters; and the operation of small bituminous coal banks producing less than 1,000 tons annually. Where the mineral products are not marketed in their crude condition, but are dressed or washed at the mine or quarry, the statistics of mining cover the entire work of obtaining the crude material and its preparation for the market.

Period covered.—The returns cover the calendar year 1909, or the business year which corresponds most nearly to that calendar year. The statistics cover a year's operations, except for enterprises which began or discontinued business during the year.

Number of operators.—As a rule, the unit of enumeration was the "operator." Every individual, firm, or corporation was required to furnish one report for all mines, quarries, or wells which were operated under the same management, or for which one set of books of account was kept. Where several mines, quarries, or wells managed separately were owned by the same operator, it was optional with the operator to furnish one report for all his operations, or a separate report for each of his properties. Separate reports were obtained for all properties operated in different states, even where they were owned by the same operator. Likewise, where the operations of one individual, firm, or corporation covered more than one class of mines and quarries, such as coal, iron, limestone, etc., a separate report was received for each industry. The total number of operators, accordingly, as shown by the original returns, included a small amount of duplication. As far as practicable, all duplications of this character within the same industry were eliminated by the consolidation of the reports for the same operator. All such duplications have been eliminated for the coal, petroleum and natural gas, iron, and copper industries.

Number of mines, quarries, and wells.—This figure represents the total number of mines and quarries in operation or in the course of development at any time during the calendar year 1909, or the business year that corresponds most nearly to that calendar year, and the number of completed petroleum and natural gas wells in operation on December 31, 1909.

In most mining and quarrying industries the number of mines or quarries varies but little from the number of operators, the principal variations being found in the mining of anthracite coal, iron, and copper, with an average of more than two mines per operator; in the mining of tungsten, with an average of more than five mines per operator; and in the quarrying of gypsum, with an average of nearly three quarries per operator. In the production of petroleum and natural gas there was an average of more than twenty wells to one operator.

Expenses of operation and development.—A certain amount of development work is incident to the operation of every mine. The expenses reported for producing mines include the cost both of operation and of development work which was done in connection with operation.

Wages.—The amount shown as wages includes only the compensation of regular wage earners hired by the day, week, or month,

or under the piecework system. There is a class of miners variously known under the local names of "leasers," "block lessees," etc., who are compensated by a share of the product. The compensation of such miners is included under the payments for "Contract work" in the general tables.

Supplies and materials.—This item includes the cost of lumber and timber used for repairs, mine supports, track ties, etc.; iron and steel for blacksmithing; rails, frogs, sleepers, etc., for tracks; renewals of tools and machinery and materials for repairs; and supplies, explosives, oil, etc., as well as the cost of fuel and the rent of power. The schedule called only for the cost of such supplies and materials as had been used during the year covered by the report. Accurate figures, however, could be furnished only in those cases where the operators kept an account of supplies and materials used, or had an inventory made of all in stock at the beginning and at the end of the year. Such a system of accounting is far from general among mine operators, and there is reason to believe that in many cases the reported cost of supplies and materials covered all purchased during the year rather than those used during the year. The crude product of some operators was purchased by others for further dressing or refining; the cost of such materials is shown in a separate column in the general tables for producing mines, but in all other tables it is included in the general item of cost of supplies and materials.

Miscellaneous expenses.—In the general tables royalties and the rent of mines, taxes, and the amounts paid for contract work are shown in separate columns. All other expenses not enumerated separately are combined under the head of "Rent of offices and other sundry expenses," which includes rent of offices and buildings other than those at the mine, quarry, or well, use of patents, insurance, ordinary repairs of buildings and machinery (not including materials therefor where carried in separate accounts), advertising, damages, traveling expenses, and all other sundry expenses.

Value of products.—Statistics of the value of each mineral product were obtained by the Bureau of the Census in cooperation with the United States Geological Survey, but the two bureaus follow different methods in presenting these statistics. The Geological Survey shows separately the value of each mineral product, whereas the Bureau of the Census presents the value of products of each mining industry. The value of products given for each mining industry often includes the value of some products not covered by the industry designation. The crude product of metalliferous mines may include varying combinations of metals, such as gold, silver, copper, lead, zinc, and iron. Similarly, the total value of all products of the granite quarries is not identical with the value of the total output of granite, but may include the value of some marble or other stone quarried in connection with the principal product.

The value of products for 1909 in most cases represents the value of the products marketed during that year, not the value of those mined during that year. In this respect the data differ from those usually obtained for manufacturing establishments. In order to ascertain the value of the products mined during the year 1909, account would have had to be taken of the inventories at the beginning and at the close of the year. In many mining industries, however, no such inventories are made, by reason of the purely speculative value of the crude product lying on the dump.

Another element of inaccuracy inherent in the statistics as to the value of products is due to the combination of mining with manufacturing. Most of the product of iron mines is not sold, but is used in blast furnaces operated by the owners of the mines. A large proportion of the output of coal is likewise used in iron and steel works operated by the owners of the coal mines, while a considerable proportion also is controlled by railway companies and other industrial concerns which own the coal mines, either directly, or indirectly through subsidiary companies. In such cases the reported value of the mining product is often a mere item of bookkeeping which may or may not reflect the actual market value of the product.

The total value of products for some industries includes a certain amount of duplication, due to the fact that the crude product of some operators was used as material by others whose mines or quarries were equipped with dressing or refining plants; the total value of products for the industry, accordingly, includes both the crude product and the refined product made from it. In order to eliminate this duplication and to obtain the approximate value of products for each industry, the cost of such materials, which is shown in a separate column in the general tables for producing mines, should be subtracted from the total value of products for the industry. There is, however, a certain degree of inaccuracy involved in such a computation, because the purchaser of the crude product usually figures freight as a part of the cost of his materials, whereas the value reported by the producer represents the selling value at the mine.

Cost of production and profits.—It can be seen from the preceding explanations that the difference between the reported value of products and the total expenses reported does not accurately represent profits. As already stated the product reported usually represents that sold rather than the actual output in producing which the expenses were incurred. Furthermore, the census inquiries did not call for depreciation, which is a particularly important element in mining because of the exhaustion of the mine. Few mining concerns keep a separate account for depreciation. Moreover, the heterogeneous character of the returns regarding capital precludes the computation, from census statistics, of the rate of return on the investment.

Capital.—The census schedule required every operator to state the total amount of capital invested in the enterprise on the last day of the business year reported, as shown by his books. There is, however, a great diversity in the methods of bookkeeping in use by different operators. As a result, the statistics for capital lack uniformity. Some of the reported figures apparently represent capital stock at face value; others include large investments in mineral lands which are not at present being actively mined, but are held in reserve; still others may include expenditures for unproductive mining ventures in no way related to the operations carried on during the census year.

Persons engaged in mining industries.—The statistics of the number of proprietors and officials, clerks, and wage earners, are based on the returns for December 15, or the nearest representative day. The reported number of wage earners includes overseers and foremen performing work similar to that of the men over whom they have charge; those whose duties are wholly supervisory are classed as superintendents and managers. Because of the very common practice of shutting down mines at frequent intervals, it is impossible to ascertain with any satisfactory degree of accuracy the average number of employees—that is, the number who, if continuously employed, would be required to produce the actual output of the year.

Primary horsepower.—This item represents the total primary power generated by the mining enterprises plus the amount of power, principally electric, rented by them from other concerns. It does not cover the horsepower of electric motors operated by current generated by the enterprises themselves, the inclusion of which would evidently result in duplication.

GENERAL SUMMARY.

Continental United States and noncontiguous territory: 1909.—Table 1 gives for 1909 the principal statistics collected by the Bureau of the Census for all mines and quarries and petroleum and gas wells within the area of enumeration. In addition to continental United States this area included in 1909 Alaska, Hawaii, and Porto Rico. The figures here given include nonproducing as well as producing mines and constitute the most general summary of the results of the investigation.

Table 1

	NUMBER OR AMOUNT: 1909				
	Total.	Continental United States.	Alaska.	Hawaii.	Porto Rico.
Number of operators	24,355	23,664	673	4	14
Number of mines and quarries	27,260	27,240	.....	6	14
Number of petroleum and gas wells	166,448	166,448	.....	.....	.....
Persons engaged in mining industries, Dec. 15, 1909	1,175,188	1,166,948	8,025	45	170
Proprietors and firm members, total	35,208	33,691	1,501	2	14
Number performing manual labor in connection with mines, quarries, and wells	10,740	10,299	441	.....	.....
Salaried employees	46,694	46,475	219	.....	.....
Wage earners	1,093,286	1,086,782	6,305	43	156
Primary horsepower	4,722,479	4,699,910	22,347	197	25
Capital	$3,710,356,533	$3,662,527,064	$47,749,164	$45,700	$34,605
Expenses of operation and development	1,087,437,081	1,074,191,429	13,220,200	19,760	5,692
Services	662,422,226	655,584,467	6,819,850	14,058	3,851
Salaries	56,286,988	55,878,478	408,510	.....	.....
Wages	606,135,238	599,705,989	6,411,340	14,058	3,851
Supplies and materials	263,019,615	260,110,898	2,902,956	5,371	330
Royalties and rent of mines	65,683,384	64,154,926	1,527,995	206	257
Contract work	32,335,580	30,690,458	1,645,063	.....	59
Miscellaneous	63,976,276	63,650,680	324,336	125	1,135
Value of products	1,255,370,163	1,238,410,322	16,933,427	20,955	5,459

Of the total number of persons engaged in mining industries in the area covered by the preceding table, only a little more than one-half of 1 per cent were in Alaska, while the mining operations in Hawaii and Porto Rico were insignificant.

Owing to the fact that a certain number of mines in continental United States and Alaska were engaged in development work only, during the census year, the figure for value of products in 1909, $1,255,370,163, relates to a smaller number of enterprises than the figures for persons engaged in the industries, expenses, etc. Of the total, representing the value of the products of all mines in the entire area covered by the canvass, Alaska contributed $16,933,427, or 1.3 per cent, while Hawaii contributed only $20,955 and Porto Rico $5,459. A rough but somewhat convenient measure of the relative importance of mining operations in the areas concerned is found in the per capita production (that is, value of products divided by total population), which was $13.46 for continental United States, $263.12 for Alaska, $0.11 for Hawaii, and less than 1 cent for Porto Rico.

The further discussion of mining operations in this chapter is confined to the data reported for continental United States (referred to simply as the United States).

Producing and nonproducing mines.—In some aspects of the statistics of mining industries the distinction between producing and nonproducing mines is important. So far as it is possible to bring the figures in regard to production into relation with the various factors of operation, particularly the number of employees and the expenses of operation, it is necessary to confine comparisons to the producing mines. Table 2 gives comparative figures for producing and nonproducing mines in the United States.

Table 2

	All enterprises.	Producing enterprises.	NONPRODUCING ENTERPRISES.	
			Number or amount.	Per cent of total.
Number of operators	23,664	19,915	3,749	15.8
Number of mines and quarries	27,240	18,164	9,076	33.3
Number of wells	166,448	166,320	128	(1)
Persons engaged in mining industry	1,166,948	1,139,332	27,616	2.4
Proprietors and firm members, total	33,691	29,922	3,769	11.2
Number performing manual labor	9,937	8,961	1,076	10.8
Salaried employees	46,475	44,127	2,348	5.1
Wage earners	1,086,782	1,065,263	21,499	2.0
Primary horsepower	4,699,910	4,608,253	91,657	2.0
Capital	$3,662,527,064	$3,380,525,841	$282,001,223	7.7
Expenses of operation and development	1,074,191,429	1,042,642,693	31,548,736	2.9
Services	655,584,467	640,167,630	15,416,837	2.4
Salaries	55,878,478	53,393,551	2,484,927	4.4
Wages	599,705,989	586,774,079	12,931,910	2.2
Supplies and materials	260,110,898	247,866,304	12,244,594	4.7
Royalties and rent of mines	64,154,926	63,973,585	181,341	0.3
Contract work	30,690,458	28,887,898	1,802,560	5.9
Miscellaneous	63,650,680	61,747,275	1,903,404	3.0
Value of products	1,238,410,322	1,238,410,322	.....	.....

(1) Less than one-tenth of 1 per cent.

Perhaps the most satisfactory index of the relative importance of the two classes of mines shown in the preceding table is the number of wage earners and the amount of primary power, the figures for nonproducing mines representing exactly 2 per cent of the total in each instance. The average number of wage earners per operator for the nonproducing mines is 6 and for the producing mines 53.

Additional details in regard to nonproducing mines are given in Table 29 (p. 562), which presents separate figures for most of the different mining industries. The further discussion in this chapter of the statistics for 1909 will deal primarily with the producing mines, with only incidental reference to the nonproducing enterprises.

There were in all mining industries in the United States in 1909, as shown by the previous table, 19,915 operators of producing mines, who employed 1,065,283 wage earners and reported products valued at $1,238,410,322.

Geographic distribution of producing enterprises.—The distribution of the mining industries by geographic divisions and states is shown in Table 3, which gives the number of wage earners employed and the value of products for each division and state, with the percentage which such number or value forms of the total.

Table 3 PRODUCING ENTERPRISES: 1909

DIVISION AND STATE.	Number of operators.	Number of mines and quarries.	Number of wells.	Wage earners (Dec. 15, or nearest representative day). Number.	Wage earners (Dec. 15, or nearest representative day). Per cent of total.	Value of products. Amount.	Value of products. Per cent of total.
United States	**19,915**	**18,164**	**166,320**	**1,065,283**	**100.0**	**$1,238,410,322**	**100.0**
GEOGRAPHIC DIVS.:							
New England	510	586	.....	18,254	1.7	17,327,242	1.4
Middle Atlantic	6,333	3,903	71,122	402,937	37.8	370,742,262	30.0
East North Central	4,152	2,662	56,379	213,060	20.1	237,534,170	19.2
West North Central	2,300	2,603	3,450	88,458	8.3	130,252,538	10.5
South Atlantic	1,358	1,652	15,140	118,006	11.1	105,714,462	8.5
East South Central	830	1,109	1,110	70,856	6.7	49,143,289	3.9
West South Central	1,229	452	14,700	28,252	2.6	47,530,937	3.8
Mountain	1,972	3,728	97	93,072	8.7	205,053,900	16.6
Pacific	1,538	1,610	4,316	31,788	3.0	75,111,522	6.1
NEW ENGLAND:							
Maine	97	102	.....	2,471	0.2	2,056,063	0.2
New Hampshire	45	53	.....	1,520	0.1	1,308,597	0.1
Vermont	137	182	.....	8,388	0.8	8,221,323	0.7
Massachusetts	139	147	.....	3,508	0.3	3,467,888	0.3
Rhode Island	21	27	.....	677	0.1	897,666	(1)
Connecticut	71	75	.....	1,690	0.2	1,375,765	0.1
MIDDLE ATLANTIC:							
New York	1,351	752	11,342	11,303	1.1	13,334,975	1.1
New Jersey	131	151	.....	6,801	0.6	8,347,501	0.7
Pennsylvania	4,851	3,000	59,780	384,833	36.1	349,059,786	28.2
E. NORTH CENTRAL:							
Ohio	1,876	994	35,007	57,185	5.4	63,707,112	5.1
Indiana	1,010	480	10,373	27,559	2.6	21,934,201	1.8
Illinois	915	759	10,018	82,430	7.7	76,658,974	6.2
Michigan	83	173	21	40,397	3.8	67,714,479	5.5
Wisconsin	268	286	.....	6,083	0.6	7,459,404	0.6
W. NORTH CENTRAL:							
Minnesota	153	250	.....	18,114	1.7	58,004,852	4.7
Iowa	373	431	.....	19,010	1.8	13,877,781	1.1
Missouri	1,021	1,224	39	29,076	2.8	31,667,525	2.5
North Dakota	53	53	6	860	0.1	504,812	(1)
South Dakota	39	43	3	3,866	0.4	6,432,417	0.5
W. NORTH CENTRAL—Continued.							
Nebraska	18	20	.....	491	(1)	$322,517	(1)
Kansas	643	582	3,402	16,441	1.5	18,722,634	1.5
SOUTH ATLANTIC: [2]							
Delaware	9	9	.....	628	(1)	516,213	(1)
Maryland	126	173	.....	7,745	0.7	5,782,045	0.5
Virginia	150	244	.....	16,893	1.6	8,795,046	0.7
West Virginia	798	718	15,146	78,404	7.4	76,287,889	6.2
North Carolina	118	130	.....	2,825	0.3	1,358,617	0.1
South Carolina	29	32	.....	2,014	0.2	1,252,792	0.1
Georgia	92	109	.....	4,014	0.4	2,874,595	0.2
Florida	36	96	.....	5,483	0.5	8,846,065	0.7
E. SOUTH CENTRAL: [2]							
Kentucky	437	442	1,109	22,033	2.1	12,100,075	0.9
Tennessee	216	365	1	18,028	1.7	12,692,547	1.0
Alabama	177	302	.....	30,795	2.9	24,350,667	2.0
W. SOUTH CENTRAL:							
Arkansas	96	146	62	6,422	0.6	4,603,845	0.3
Louisiana	33	2	246	953	0.1	6,547,050	0.5
Oklahoma	864	212	12,113	13,020	1.3	25,637,892	2.1
Texas	236	92	2,279	6,957	0.6	10,742,150	0.9
MOUNTAIN:							
Montana	373	543	.....	20,503	1.9	54,991,961	4.4
Idaho	174	370	.....	3,592	0.3	8,649,342	0.7
Wyoming	66	95	21	8,499	0.8	10,572,188	0.9
Colorado	672	1,575	76	24,769	2.4	45,680,135	3.7
New Mexico	98	285	.....	5,682	0.5	5,587,744	0.4
Arizona	135	251	.....	13,451	1.3	34,217,651	2.8
Utah	188	235	.....	11,004	1.0	22,083,282	1.8
Nevada	206	374	.....	5,572	0.5	23,271,597	1.9
PACIFIC:							
Washington	93	170	.....	7,343	0.7	10,537,556	0.9
Oregon	116	161	.....	1,087	0.1	1,191,512	0.1
California	1,329	1,279	4,316	23,358	2.2	63,382,454	5.1

[1] Less than one-tenth of 1 per cent.

[2] No mineral production in District of Columbia or Mississippi.

Whether the importance of the mining industry be measured by the value of its products or by the number of wage earners employed, the Middle Atlantic division easily ranks first among the several geographic divisions, the value of its mineral products in 1909 amounting to $371,000,000, or 30 per cent of the total for the United States. Next in order was the East North Central division, with products valued at $238,000,000, or about one-fifth of the total. The mineral products of these two divisions consist largely of coal. Other divisions with a considerable mineral production are the Mountain, West North Central, and South Atlantic.

The prominence of the Middle Atlantic division in mineral production is due almost wholly to the state of Pennsylvania, which, with products (mainly coal) valued at nearly $350,000,000 in 1909, reported more than one-fourth of the value of all mineral products in the United States. No other state approaches it in importance. Illinois and West Virginia, which rank next in importance, each had products valued at a little more than $76,000,000, or less than one-fourth the value shown for Pennsylvania. Other states where the value of mineral products exceeded $50,000,000 are Michigan, Ohio, California, Minnesota, and Montana. The eight states named reported in 1909, 65.4 per cent of the value of all mineral products for the United States.

There are several states in which the mineral production is quite insignificant. In the District of Columbia and Mississippi no mineral production was reported. Rhode Island, North Dakota, Nebraska, and Delaware each contributed less than one-tenth of 1 per cent of the whole value of mineral products, while the contribution of Maine, New Hampshire, Massachusetts, Connecticut, North Carolina, South

Carolina, Georgia, Arkansas, New Mexico, and Oregon was less than one-half of 1 per cent in each case.

The distribution of the wage earners employed in producing mines among the divisions and states follows approximately the distribution of the total value of products. Where coal is the chief mineral product, however, the number of wage earners is relatively greater than elsewhere. The Middle Atlantic division reported a considerably greater percentage of all wage earners in the producing mines of the country than of the total value of mineral products. In less marked degree the same statement holds true of the East South Central, South Atlantic, East North Central, and New England divisions, while each of the remaining divisions reported a larger percentage of the total value of products than of the total number of wage earners. Pennsylvania employed 36.1 per cent of all the wage earners, Illinois 7.7 per cent, and West Virginia 7.4 per cent, these three leading coal states together reporting more than one-half of all the wage earners employed in mining industries.

Principal mining industries.—Table 4 shows the relative importance of the principal mining industries in 1909.

Table 4

INDUSTRY.	PRODUCING ENTERPRISES: 1909				
	Number of operators.	Wage earners (Dec. 15, or nearest representative day).		Value of products.	
		Number.	Per cent of total.	Amount.	Per cent of total.
All industries	19,915	1,065,283	100.0	$1,238,410,322	100.0
Coal	3,695	743,293	69.8	577,142,935	46.6
Anthracite	192	173,504	16.3	149,180,471	12.0
Bituminous	3,503	569,789	53.5	427,962,464	34.6
Petroleum and natural gas	7,793	39,831	3.7	185,416,684	15.0
Metals:					
Copper	161	53,143	5.0	134,616,987	10.9
Iron	176	52,230	4.9	106,947,082	8.6
Precious metals	2,282	37,815	3.6	94,123,180	7.6
Deep mines	1,604	33,616	3.2	83,885,928	6.8
Placer mines	678	4,199	0.4	10,237,252	0.8
Lead and zinc	977	21,603	2.0	31,303,094	2.5
Structural materials	3,988	92,350	8.7	75,992,908	6.1
Limestone	1,665	37,695	3.5	29,832,492	2.4
Granite	707	20,561	1.9	18,997,976	1.5
Sandstone	595	9,908	0.9	7,702,423	0.6
Marble	77	6,313	0.6	6,239,120	0.5
Slate	185	9,438	0.9	6,054,174	0.5
Traprock	196	6,260	0.6	5,578,317	0.5
Bluestone	563	2,175	0.2	1,588,406	0.1
Miscellaneous:					
Phosphate rock	51	8,186	0.8	10,781,192	0.9
Gypsum	78	3,778	0.4	5,812,810	0.5
Sulphur	4	408	(1)	4,432,066	0.4
Clay	261	3,871	0.4	2,945,948	0.2
All other	449	8,775	0.8	8,835,436	0.7

[1] Less than one-tenth of 1 per cent.

The foregoing table presents statistics for 9 industries which in 1909 had products exceeding $10,000,000 in value. These 9 industries employed 95.2 per cent of all the wage earners engaged in producing enterprises and contributed 96 per cent of the total value of the products of mining industries. Statistics are also given in the table for 8 other mining industries having products between $1,500,000 and $10,000,000 in value. The 17 industries shown separately in the table employed over 99 per cent of the wage earners engaged in productive enterprises and contributed more than 99 per cent of the total value of products of mining industries.

Coal mining far outranks any other industry in importance. In 1909 it furnished occupation to more than two-thirds of all the wage earners employed by producing mines, quarries, and wells, and contributed only a little less than one-half of the total value of products reported. Of the total value of coal produced, the anthracite mines furnished approximately one-fourth and the bituminous mines three-fourths. Another fuel industry—the production of petroleum and natural gas—ranks second in importance in value of products, but employs comparatively few wage earners.

Of the metals, copper and iron outrank the precious metals both in the value of the product mined and in the number of wage earners, but lead and zinc fall considerably below the precious metals in both respects.

General comparison for the United States: 1902–1909.—Table 5 on the next page gives statistics regarding expenses, value of products, and mechanical power for producing mines, quarries, and petroleum and gas wells in the United States for 1909 and 1902, together with the percentages of increase.

The figures in this table for 1909 vary slightly from those shown in preceding tables by reason of the differences between the present census and that of 1902 in the classification of mining industries. There are many industries on the border line between mining and manufacturing. Certain mechanical and chemical processes required for the preparation of the mineral for the market after its extraction from the ground may be performed either at the mine or at the factory where the mineral is used as material. The practices in this respect vary from industry to industry and from period to period.

At the Thirteenth Census the production of cement was classified as a manufacturing industry. The burning of lime was likewise classified as a manufacturing industry, and where the lime was burned at the limestone quarry the quarrying was regarded as a subordinate part of the manufacturing operations. At the special census of mines and quarries in 1902, however, the cement industry was included, and the burning of lime was treated as a part of the operations of the limestone quarries. In order to make the statistics for the two censuses comparable, the figures given in Table 5 include for 1909 those for the burning of lime, elsewhere treated as a manufacturing industry, and exclude for 1902 those relating to the production of cement.

On the other hand, the special census of 1902 did not include the conversion of coal into coke at the coal mines. In the Thirteenth Census reports the coke industry is treated both in the report on manufactures and in that on mines. Where coal was turned into coke at the mines, estimates were obtained for the coke-manufacturing operations and included in the statistics of manufactures. At the same time, since the

mining of the coal and its conversion at the mines into coke form, in fact, integral parts of one industrial operation, the complete report for both processes is included in the statistics for bituminous coal mines. In order, however, to make the statistics for 1909 comparable with those for 1902, all statistics relating to coke have been eliminated from the table which follows.

By reason of these adjustments the figures here printed do not correspond either to those given in the report for 1902 or to those printed elsewhere for 1909.

Table 5	NUMBER OR AMOUNT.		Per cent of increase.
	1909	1902	
Expenses of operation and development:			
Services	$625,610,068	$401,225,547	55.9
Supplies and materials	208,771,046	114,515,832	82.3
Royalties and rent of mines	62,456,760	34,476,227	81.2
Contract work	24,091,086	20,638,127	16.7
Value of products	1,175,475,001	771,486,926	52.4
Primary horsepower	4,556,170	2,663,964	71.0

The item "taxes, rent of offices, and other sundry expenses," which is included with the expenses of operation and development in the tables giving statistics for 1909 only, is not shown in this table for the reason that at the special census of mines and quarries in 1902 the corresponding item of expenses included interest, which was excluded at the Thirteenth Census. In 1902 the item of interest on bonds amounted to more than $13,000,000, which was equal to over 2 per cent of the total expenses. The amount of interest paid on other loans was not reported separately, but was included with rent of offices, taxes, insurance, etc. The aggregate expenses shown in the preceding table represent 96.3 per cent of the total expenses reported for 1902 exclusive of interest on bonds, while the aggregate for 1909 represents 90.6 per cent of the total expenses for that year.

In 1902 the products of mining industries were valued at $771,486,926, but in 1909 the value was reported as $1,175,475,001, an increase of 52.4 per cent in the seven years.

Table 26, page 557, gives comparative statistics in detail for the years 1909 and 1902, by industries. Table 6, which is based on this table, gives for the leading mining industries the value of products in 1909 and 1902, with the percentage of increase.

Table 6 INDUSTRY.	VALUE OF PRODUCTS.		Per cent of increase.
	1909	1902	
All industries	**$1,175,475,001**	**$771,486,926**	**52.4**
Coal	550,513,866	366,642,015	50.2
Anthracite	149,180,471	76,173,586	95.8
Bituminous	401,333,395	290,468,429	38.2
Petroleum and natural gas	175,527,807	102,034,590	72.0
Copper	99,493,799	51,178,036	94.4
Iron	106,947,082	65,460,985	63.4
Precious metals	87,071,553	82,482,052	6.3
Deep mines	77,434,301	77,154,326	0.4
Placer mines	10,237,252	5,327,726	92.2
Lead and zinc	28,508,547	14,600,177	95.7
Limestone	47,784,479	30,278,877	57.8
Granite and traprock	24,576,203	18,042,943	36.2
Phosphate rock	10,781,192	4,922,943	119.0

This table shows that the greatest relative increase in the seven-year period was in the phosphate rock industry, the value of products of this industry in 1909 being more than double that in 1902. The smallest relative increase (6.3 per cent) was in the mining of precious metals, the deep mines showing an increase in value of products amounting to only 0.4 per cent, although the less important placer mines show an increase of 92.2 per cent. Large increases are shown for the mining of copper and of lead and zinc. There was also a large increase in the case of anthracite coal, but on account of the coal strike in 1902 the figures for that year do not represent normal conditions. The percentage of increase in the bituminous coal-mining industry falls considerably below the average for all mining industries in the period under consideration. To some extent this is due to a decline in the average price of bituminous coal, for the tonnage produced increased more than 45 per cent.

Table 25, page 555, gives comparative statistics in detail for the years 1909 and 1902, by states. The following table presents certain figures for those states which show a relative increase in the value of products above the average for the United States:

Table 7 STATE.	VALUE OF PRODUCTS.		Per cent of increase.
	1909	1902	
Louisiana	$6,539,850	$279,327	2,241.3
Florida	8,915,181	2,943,806	202.8
Minnesota	58,975,781	25,620,677	130.2
Nebraska	322,517	148,391	117.3
New Jersey	8,548,858	4,042,047	111.5
Illinois	77,214,345	37,377,226	106.6
California	59,012,940	28,611,307	106.3
Wisconsin	8,575,402	4,257,685	101.4
Washington	10,820,503	5,393,659	100.7
Kansas	18,386,812	9,526,060	93.0
North Dakota	564,812	325,967	73.3
Arkansas	4,764,784	2,840,341	67.8
Texas	11,095,588	6,737,696	64.7

Corresponding figures for those states in which the value of products showed an actual decrease from 1902 to 1909 are given in Table 8.

Table 8 STATE.	VALUE OF PRODUCTS.		Per cent of decrease.
	1909	1902	
Colorado	$39,307,859	$40,508,286	2.7
Massachusetts	4,332,218	4,499,401	3.7
South Dakota	6,415,788	6,697,797	4.2
Georgia	2,924,741	3,080,287	5.0
Maine	3,270,766	3,656,134	10.5
Maryland	6,164,122	7,162,113	13.9
Indiana	22,324,047	26,896,393	17.0
Oregon	1,237,202	2,087,389	40.7

Colorado and Indiana are the only important mining states that show a decrease in mining activity. This decline in Colorado is manifested not only in the value of products, but also in the amount expended for salaries and wages, which decreased 7.2 per cent, and for royalties, which shows a decrease of 4.4 per cent.

Geographic distribution of the principal industries: 1909.—Table 9 gives statistics, by leading states, for each of the nine leading mineral industries.

Table 9

INDUSTRY AND STATE.	Number of operators.	WAGE EARNERS (DEC. 15, OR NEAREST REPRESENTATIVE DAY). Number.	Per cent of total.	VALUE OF PRODUCTS. Amount.	Per cent of total.
Coal, anthracite	192	173,504	100.0	$149,180,471	100.0
Pennsylvania	189	173,263	99.9	148,957,894	99.9
Coal, bituminous	3,503	569,789	100.0	427,962,464	100.0
Pennsylvania	689	184,408	32.4	147,466,417	34.5
Illinois	470	74,445	13.1	53,030,545	12.4
West Virginia	307	69,666	12.2	46,929,592	11.0
Ohio	441	44,405	7.8	27,353,663	6.4
Alabama	112	23,479	4.1	18,459,433	4.3
Colorado	86	15,461	2.7	15,782,197	3.7
Indiana	223	22,357	3.9	15,018,123	3.5
Iowa	258	17,623	3.1	12,682,106	3.0
Kentucky	240	19,655	3.4	10,003,481	2.3
Kansas	118	12,791	2.2	9,835,614	2.3
Wyoming	35	7,839	1.4	9,721,134	2.3
Washington	32	6,155	1.1	9,226,793	2.2
Tennessee	85	11,154	2.0	6,688,454	1.6
Oklahoma	56	8,814	1.5	6,185,078	1.4
Missouri	173	9,526	1.7	5,881,034	1.4
Montana	48	4,612	0.8	5,117,444	1.2
Petroleum and natural gas	7,793	39,831	100.0	185,416,684	100.0
Pennsylvania	3,030	7,397	18.6	39,197,475	21.1
Ohio	1,188	5,897	14.8	29,620,959	16.0
California	339	7,007	17.6	29,310,335	15.8
West Virginia	442	7,093	17.8	28,188,087	15.2
Illinois	323	4,059	10.2	18,895,815	10.2
Oklahoma	711	3,066	7.7	17,685,092	9.5
Kansas	217	1,302	3.3	6,681,780	3.6
Texas	163	1,405	3.5	6,391,313	3.4
Copper	161	53,143	100.0	134,616,987	100.0
Montana	35	13,697	25.8	45,900,517	34.1
Arizona	43	11,394	21.4	31,614,116	23.5
Michigan	7	19,022	35.8	30,165,443	22.4
California	9	2,510	4.7	10,104,373	7.5
Utah	22	3,304	6.2	8,432,099	6.3
Iron	176	52,230	100.0	106,947,082	100.0
Minnesota	20	16,218	31.1	57,076,135	53.4
Michigan	24	16,125	30.9	32,168,133	30.1
Alabama	25	5,666	10.8	4,939,149	4.6
New York	14	2,542	4.9	3,095,023	2.9
Wisconsin	6	1,455	2.8	2,972,584	2.8
Precious metals, Deep mines	1,604	33,616	100.0	83,885,928	100.0
Colorado	439	7,586	22.6	27,147,937	32.4
Nevada	218	3,818	11.4	17,807,945	21.2
California	395	6,622	19.7	9,690,956	11.6
Utah	108	3,905	11.6	8,541,522	10.2
Idaho	60	3,077	9.2	7,926,602	9.4
South Dakota	13	3,466	10.3	6,120,970	7.3
Precious metals, Placer mines	678	4,199	100.0	10,237,252	100.0
California	392	3,073	73.2	8,751,022	85.5
Lead and zinc	977	21,603	100.0	31,363,094	100.0
Missouri	617	16,319	75.5	22,565,528	71.9
Wisconsin	88	1,753	8.1	1,989,907	6.3
Kansas	189	848	3.9	1,059,540	3.4
Oklahoma	47	724	3.4	695,235	2.2
Limestone	1,665	37,695	100.0	29,832,492	100.0
Pennsylvania	311	7,179	19.0	4,733,819	15.9
Illinois	81	3,276	8.7	3,977,359	13.3
Indiana	126	3,724	9.9	3,616,696	12.1
Ohio	144	3,746	9.9	3,363,149	11.3
New York	127	3,104	8.2	2,656,142	8.9
Missouri	144	2,437	6.5	2,027,902	6.8
Granite	707	20,561	100.0	18,997,976	100.0
Vermont	51	2,035	9.9	2,829,522	14.9
Massachusetts	82	2,278	11.1	2,185,986	11.5
Maine	85	2,132	10.4	1,761,801	9.3
California	62	1,318	6.4	1,518,916	8.0
Wisconsin	21	1,448	7.0	1,433,105	7.5
New Hampshire	40	1,305	6.3	1,205,811	6.3
Phosphate rock	51	8,186	100.0	10,781,192	100.0
Florida	26	5,105	62.4	8,488,801	78.7
Tennessee	23	1,725	21.1	1,395,942	12.9
South Carolina	5	1,307	16.0	882,409	8.0

Statistics are given for each of the states where the industry in question is important either by reason of the absolute value of the product or of its proportion of the total for the industry. In most of the industries here shown the production is so concentrated that the states given represent upward of nine-tenths of the entire production, but in the case of the lead and zinc, limestone, and granite industries, the aggregate value of the products reported by the states named falls short of this fraction.

Of the value of the products of the bituminous coal mines in 1909, Pennsylvania contributed more than one-third, and a group of five states—Pennsylvania, West Virginia, Ohio, Indiana, and Illinois—together reported more than two-thirds of the total. Including those just named, the table shows 16 states, situated in all parts of the Union, which had a product valued at more than $5,000,000. The anthracite coal production is practically confined to the state of Pennsylvania.

Petroleum and natural gas also show production centers in various parts of the country. Pennsylvania leads, with a little over one-fifth of the total value of products for the industry, but does not report so large a proportion of the total as in the case of coal.

More than one-third of the value of products for the copper industry in 1909 was represented by the product of Montana, while Arizona and Michigan each contributed over one-fifth. More than one-half of the value of products for the iron industry in 1909 was contributed by Minnesota and somewhat less than one-third by Michigan.

In the production of precious metals by placer mining California was the only important state, while nearly one-third of the value of products for deep mines was reported from Colorado and over one-fifth from Nevada. The production of Alaska is not included in the table, which relates exclusively to continental United States It may, however, be noted that the canvass of mines in Alaska by the Bureau of the Census gave $12,762,000 as the value of the products of placer mining in that territory. The inquiry of 1909 was the first attempt to secure information concerning placer mining in Alaska by census methods. The wide extent of the field and the difficulties of the inquiry lead to the belief that the product reported is considerably short of the actual product of the Alaska placer mines.

The lead and zinc industry is geographically far more closely concentrated than any thus far considered. In 1909 Missouri reported 71.9 per cent of the total value of products of this industry and employed 75.5 per cent of the wage earners engaged therein. The phosphate rock industry shows a marked concentration in the state of Florida, which reported 78.7 per cent of the total value of products and employed 62.4 per cent of all wage earners in the industry. On the other hand, the production of limestone and granite is widely distributed. In the case of the limestone industry, the six states which had a product exceeding $2,000,000 in value together reported but little more than two-thirds of the total value of products; and in the case of the granite industry the six states having a product in excess of $1,000,000 in value reported only 57.5 per cent of the total. In addition the variation in value of products among the states named in the table is much less marked in the case of these industries than in most of the other industries listed.

PERSONS ENGAGED IN MINING INDUSTRIES.

The number of persons engaged in mining industries, by classes, was ascertained as far as possible for December 15 of the year 1909. In those cases, however, where the mines were not in operation on that date, or the time records for that date were not obtainable, the numbers were ascertained for the nearest representative date. In addition to this information, the number of wage earners, without classification, was ascertained for the 15th day of every month.[1]

The whole number of persons engaged in connection with producing mines, quarries, and wells, as reported on December 15, or the nearest representative day, was 1,139,332, of whom 1,065,283 were wage earners. Since the representative day was taken in some other month than December, in many cases, because the mines were not in operation on December 15, as stated above, this number of wage earners is greater than the number actually engaged at any given time. The greatest number simultaneously employed in all producing mines was 1,022,885, this number being reported for November 15. This does not, however, represent the entire number of persons who gave all or a part of their time to mining in 1909. The busiest months do not coincide for all mining industries nor for all mines within a given industry. Mining, moreover, affords some contrast to manufactures with respect to employment. Whereas in the manufacturing cities there is some opportunity for wage earners to pass from one industry where employment is temporarily slack to another where labor is in greater demand, there is rarely sufficient diversity of mining industries in a given locality to permit such a shifting. Furthermore, even within an industry as widespread as bituminous coal mining, distance would largely prevent the employees of a mine temporarily shut down from seeking employment in other coal mines. The total number of wage earners reported for December 15, or the nearest representative day, namely, 1,065,283, may therefore be accepted as less, if anything, than the total number of wage earners who derived a livelihood from mining during the year 1909.

Distribution by sex and age.—Table 10 shows the classification of the persons employed in producing mines on the 15th day of December, or the nearest representative day.

Women were employed only in supervisory and clerical capacities, none being reported as wage earners in mining operations proper. It will be noted, moreover, that the reported number of boys under 16 years of age, 8,151, is less than 1 per cent of the whole number of wage earners employed.

Table 10

CLASS.	PERSONS ENGAGED IN PRODUCING ENTERPRISES: 1909		
	Total.	Male.	Female.
All classes	1,139,332	1,135,528	3,804
Proprietors and officials	49,374	47,931	1,443
Proprietors and firm members	29,922	28,571	1,351
Salaried officers of corporations	5,657	5,577	80
Superintendents and managers	13,795	13,783	12
Clerks and other salaried employees	24,675	22,314	2,361
Wage earners	1,065,283	1,065,283	.....
16 years of age and over	1,057,132	1,057,132	.....
Under 16 years of age	8,151	8,151	.....

Distribution by industrial status.—Table 11 shows for all mining industries and for the nine most important industries separately the distribution of the persons engaged in producing enterprises according to general character of occupation or industrial status, together with the percentage that each class forms of the total.

Table 11

INDUSTRY.	PERSONS ENGAGED IN PRODUCING ENTERPRISES: 1909						
	Number.				Per cent of total.		
	Total.	Proprietors and officials.	Clerks and other salaried employees.	Wage earners.	Proprietors and officials.	Clerks and other salaried employees.	Wage earners.
All industries	1,139,332	49,374	24,675	1,065,283	4.3	2.2	93.5
Coal	770,681	12,935	14,453	743,293	1.7	1.9	96.4
Anthracite	178,004	1,315	3,185	173,504	0.7	1.8	97.5
Bituminous	592,677	11,620	11,268	569,789	2.0	1.9	96.1
Petroleum and natural gas	62,172	19,353	2,988	39,831	31.1	4.8	64.1
Copper	55,258	661	1,454	53,143	1.1	2.7	96.2
Iron	55,176	1,109	1,837	52,230	2.1	3.3	94.6
Precious metals	43,191	4,508	868	37,815	10.4	2.0	87.6
Lead and zinc	24,397	2,525	269	21,603	10.4	1.1	88.5
Limestone	41,029	2,645	680	37,695	6.4	1.7	91.9
Granite	22,211	1,248	402	20,561	5.6	1.8	92.6
Phosphate rock	8,573	214	173	8,186	2.5	2.0	95.5

Of the whole number of persons engaged in producing enterprises, 4.3 per cent were proprietors and officials, 2.2 per cent were clerks and other salaried employees, and 93.5 per cent were wage earners. The proportion of proprietors and officials ranges, among the industries given, from 1.1 per cent in the copper industry to 31.1 per cent in the petroleum and natural gas industry. Large proportions for proprietors and officials occur also in the production of the precious metals and of lead and zinc. In the anthracite branch of the coal industry proprietors and officials formed only 0.7 per cent of all persons engaged in the industry. The range of difference with respect to the proportion of clerks is much less than with respect to the proportion of proprietors and officials.

Proprietors performing manual labor.—Table 12 gives, for the principal mining industries, the total number of proprietors and firm members together

[1] It must be borne in mind that the business year for which returns were obtained did not in all cases coincide with the calendar year. As a result, the total for the month of December includes a few returns for December, 1908, when the business year ended before Dec. 31, 1909. In such cases it was assumed that the number employed on the 15th day of December, 1909, was approximately equal to the number reported for Dec. 15, 1908. The same applies to the figures for other months, some of which were reported for 1908 and others for 1910. The statistics of the number of wage earners must, therefore, be regarded as approximations; they are sufficiently close, however, for purposes of general comparison.

with the number and percentage who perform manual labor.

Table 12

INDUSTRY.	PROPRIETORS AND FIRM MEMBERS IN PRODUCING ENTERPRISES: 1909		
	Total.	Performing manual labor.	
		Number.	Per cent.
All industries	29,922	8,861	29.6
Coal, bituminous	3,739	1,713	45.8
Petroleum and natural gas	16,213	2,155	13.3
Precious metals:			
Placer mines	951	673	70.8
Deep mines	2,011	951	47.3
Lead and zinc	1,947	1,171	60.1
Limestone	1,634	640	39.2
Granite	730	318	43.6

Mine operators of the old type who operate their mines without the assistance of hired help or with little help are still quite numerous, as appears from the fact that out of a total of 29,922 proprietors and firm members in 1909, 8,861, or nearly three-tenths, were personally performing manual labor in or about their enterprises. The industries in which proprietors of this type were relatively the most numerous include bituminous coal mining, in which 45.8 per cent of the proprietors and firm members were performing manual labor; lead and zinc mining, and placer mining (surface gold washing), in each of which industries a majority of the proprietors were working in their own mines; and deep gold and silver mines, in which nearly one-half of all proprietors belonged to this class. There are also a considerable number of proprietors and firm members performing manual labor in the petroleum and natural gas industry, but as the whole number of proprietors and firm members is very large, they constitute a comparatively small percentage of the total.

Wage earners by occupation.—Table 13 gives for all mining industries and for the nine most important industries separately the number of wage earners in producing mines classified by specific occupation and by age group, distinguishing those who work above and those who work below ground.

Table 13

CLASS OF WAGE EARNERS.	All mining industries.	COAL.			Petroleum and natural gas.	Copper.	Iron.	Precious metals.	Lead and zinc.	Limestone.	Granite.	Phosphate rock.
		Total.	Bituminous.	Anthracite.								
All wage earners (producing enterprises only)	1,065,283	743,293	569,789	173,504	39,831	53,143	52,230	37,815	21,603	27,695	20,561	3,126
Men 16 years of age and over	1,057,132	736,225	566,068	170,257	39,820	53,077	51,741	37,803	21,573	27,572	20,474	3,119
Engineers, firemen, mechanics, etc	103,519	42,098	29,826	12,272	27,063	6,860	7,073	5,719	3,745	3,224	1,921	1,049
Miners and miners' helpers, quarrymen, and stonecutters	627,513	467,179	384,023	83,156	.....	28,570	24,926	21,855	12,552	25,748	14,290	4,375
All other wage earners	326,100	227,048	152,219	74,829	12,757	17,647	19,742	10,228	5,276	8,600	4,263	2,695
Boys under 16 years of age	8,151	6,968	3,721	3,247	11	66	489	12	20	123	87	67
Above ground, total	366,962	142,843	94,090	48,753	39,831	22,481	24,889	15,333	8,062	27,695	20,561	7,925
Men 16 years of age and over	361,928	138,792	93,273	45,519	39,820	22,420	24,569	15,324	8,057	27,572	20,474	7,858
Engineers, firemen, mechanics, etc	93,586	34,141	24,389	9,752	27,063	6,238	6,597	5,112	3,584	3,224	1,921	1,049
Miners and miners' helpers, quarrymen, and stonecutters	78,380	.....	.....	.....	.....	1,269	4,736	2,870	427	25,748	14,290	4,117
All other wage earners	189,962	104,651	68,884	35,767	12,757	14,913	13,236	7,342	4,026	8,600	4,263	2,692
Boys under 16 years of age	5,034	4,051	817	3,234	11	61	320	9	25	123	87	67
Below ground, total	698,321	600,450	475,699	124,751	.....	30,662	27,341	22,482	13,541	.....	.....	201
Men 16 years of age and over	695,204	597,533	472,795	124,738	.....	30,657	27,172	22,479	13,536	.....	.....	201
Engineers, firemen, mechanics, etc	9,933	7,957	5,437	2,520	.....	622	476	598	161	.....	.....	.....
Miners and miners' helpers	549,133	467,179	384,023	83,156	.....	27,301	20,190	18,965	12,125	.....	.....	198
All other wage earners	136,138	122,397	83,335	39,062	.....	2,734	6,506	2,896	1,250	.....	.....	3
Boys under 16 years of age	3,117	2,917	2,904	13	.....	5	169	3	5	.....	.....	.....

This table gives further information in regard to the employment of boys under 16 years of age. Only eight-tenths of 1 per cent of the wage earners in all mining industries were boys under 16 years of age, and of these only three-eighths were employed below ground. The largest number of boys under 16 years of age (3,721) were employed in bituminous coal mining, though 3,247 were employed in the anthracite coal-mining industry, where they formed nearly 2 per cent of the whole number of wage earners—a higher percentage than in any other industry shown in the table. Most of the boys in the anthracite coal industry, however, were employed above ground. In none of the other industries shown in the table did the proportion of boys under 16 years of age reach 1 per cent of the whole number of wage earners.

Miners, and miners' helpers, quarrymen, and stonecutters constitute the most numerous class of wage earners, forming, in 1909, 58.9 per cent of the whole number employed in all industries combined. The proportion of miners and miners' helpers reached 67.4 per cent in the bituminous coal industry and 47.9 per cent in anthracite coal mining. It was about the same in the iron mines, but somewhat greater in the other industries employing miners. In the limestone and granite industries quarrymen and stonecutters are naturally the largest numerical group.

The wage earners included under the head of "Engineers, firemen, mechanics, etc.," constituted 9.7 per cent of all wage earners employed in mining in 1909. The proportion was lowest in the coal industry, where such wage earners formed 5.7 per cent of the total, and highest in the petroleum and natural gas industry, where they constituted 67.9 per cent.

The miscellaneous group "All other wage earners," which is composed mostly of unskilled laborers, comprised 30.6 per cent of all wage earners employed. The proportion in this class was largest in anthracite coal mining (43.1 per cent) and smallest in the granite industry (20.7 per cent).

In all mining industries about one-third of the wage earners (34.4 per cent) were employed above ground and about two-thirds (65.6 per cent) below ground. The two branches of the coal-mining industry have a larger proportion of their wage earners below ground than any other mining industry. In the phosphate rock industry only 3.2 per cent of the wage earners were employed below ground, while three of the industries named in the table—the petroleum and natural gas, limestone, and granite industries—are exclusively surface industries.

Contract work.—In addition to the work performed by wage earners regularly engaged in mining and by the proprietors who contribute their own labor to the operation of the mines, a portion of the work incident to mining is done by contract. The number of wage earners employed by contractors can not be ascertained, because the work is temporary and the same men after completing one job are shifted to another place. A special form of contract work common in certain metalliferous mines is the working of mines in return for a share of the product. Under this system a miner "leases" a block in a mine on a royalty basis; the product is delivered by him to the mine owner, who disposes of it, deducts the royalty, and pays the "lessee" his share. In the operation of petroleum and natural gas wells, little labor is required. This condition has called into existence a special class of mechanics who contract with individual operators to take care of their properties, devoting to each property only a part of their time.

The relative importance of work done under contract, as compared with the work performed by regular wage earners, is shown by a comparison of the total amount paid out in wages with the total expenditure for contract work. While the total wages paid in the United States in 1909 amounted to $586,774,000, the total expenditure for contract work amounted to $28,888,000, which included $3,798,000 paid to miners compensated by a share of the product, and $1,035,000 paid to part-time men for taking care of petroleum and natural gas wells. There were 3,261 operators, or 16.4 per cent of the total number in the United States, whose properties were operated exclusively by contract work, as defined above. This form of operation was more or less general with operators of petroleum and natural gas wells, of whom 3,021, or 38.8 per cent, belonged to this class. Next in point of numbers were 104 operators of deep mines of precious metals, or 6.5 per cent of all operators engaged in that industry, who employed contract labor exclusively. In all other industries combined this class included only 136 operators, or 1.3 per cent of the total number.

Number of persons employed, by months.—Table 14 shows the number of wage earners reported for the 15th of each month in producing enterprises in all mining industries combined and in coal mining separately, the latter industry, as already noted, including nearly 70 per cent of all wage earners in producing enterprises.

Table 14 WAGE EARNERS IN PRODUCING ENTERPRISES: 1909

MONTH.	All mining industries.		Coal.		All other mining industries.	
	Number.	Per cent of maximum.	Number.	Per cent of maximum.	Number.	Per cent of maximum.
January	940,119	91.9	691,244	94.8	248,875	80.7
February	936,418	91.5	686,322	94.1	250,096	81.2
March	943,493	92.2	679,791	93.2	263,702	85.5
April	928,563	90.8	649,870	89.1	278,693	90.4
May	937,002	91.6	646,592	88.7	290,410	94.2
June	949,615	92.8	652,894	89.5	296,721	96.2
July	961,940	94.0	659,434	90.4	302,506	98.1
August	971,263	95.0	667,146	91.5	304,117	98.6
September	993,075	97.1	685,234	94.0	307,841	99.8
October	1,013,326	99.1	704,939	96.7	308,387	100.0
November	1,022,885	100.0	720,341	98.8	302,544	98.1
December	1,013,895	99.1	729,273	100.0	284,622	92.3

For all industries combined the largest number of wage earners, 1,022,885, was reported for November and the smallest, 928,563, or 90.8 per cent of the maximum, for April. The figure for April, however, is only slightly below the figures for the three preceding months of the year. From April to November the number increased gradually, but December showed a slight falling off. In coal mining the month of greatest activity was December, and that of least activity was May, when the number employed was equal to 88.7 per cent of the number employed in December. From May to December there was a steady increase in the number of wage earners employed. It should be noted that the figures in this table furnish only a most unsatisfactory indication of the regularity of employment. In the coal-mining industry in particular many mines operate only part of the days each week or each month, and while the number of wage earners on the rolls on the 15th of the month (which is more often reported than the number actually drawing pay) may be substantially the same from month to month, yet the average number of days each miner works during the year may be much less than the possible number of working days. In other words, there is a good deal of unemployment so distributed through the year as not to cause much fluctuation in the monthly returns.

For the principal industries Table 15 shows the month of maximum and of minimum employment, the number reported for each of these months, and the percentage which the minimum represents of the maximum.

Table 15 — WAGE EARNERS IN PRODUCING ENTERPRISES: 1909

INDUSTRY	Maximum.		Minimum.		
	Month.	Number.	Month.	Number.	Per cent of maximum.
All industries	Nov	1,022,885	Apr	928,563	90.8
Coal	Dec	729,273	May	645,592	88.7
Anthracite	Mar	173,025	Aug	165,740	95.8
Bituminous	Dec	560,089	May	478,455	85.4
Petroleum and natural gas	Nov	39,932	Feb	33,521	83.9
Copper	Oct	53,148	Dec	50,151	94.4
Iron	Oct	51,055	Jan	43,491	85.2
Precious metals	July	33,869	Dec	30,751	90.8
Lead and zinc	Dec	18,374	Jan	15,330	83.4
Limestone	Sept	37,209	Jan	17,908	48.1
Granite	Sept	21,899	Jan	13,732	62.7
Phosphate rock	July	8,114	Oct	7,610	93.8

The coal industry is divided in this table into its two constituent branches. Anthracite mining shows greater regularity of employment from month to month than bituminous mining. It will be noted that the months of maximum and minimum employment for the two branches do not correspond. For the remaining industries the month of maximum employment is generally in the fall of the year except in the case of the production of precious metals and of phosphate rock, where it is July. The quarrying industries, limestone and granite quarrying, show a wide divergence between the months of maximum and minimum employment, due to the fact that they are surface industries and much affected by weather conditions. For both industries the smallest number of wage earners was reported for January.

Prevailing hours of labor.—In Table 16 producing mines and quarries have been classified according to the prevailing hours of labor per day in each enterprise. Petroleum and natural gas wells are not included in this table, because many of them are operated without hired labor, or by men who give to each enterprise only a part of their time. Neither are those enterprises included in which all labor is performed by contractors. The table shows the percentage of the total number of enterprises falling into each group, and a percentage distribution in which each enterprise has been given a weight according to the total number of wage earners employed on December 15, 1909, or the nearest representative day. It should be clearly borne in mind that these latter percentages do not show precisely the proportion of the total number of wage earners working the specified number of hours per day, since in many cases some of the employees work a greater or less number of hours than those generally prevailing in the enterprise. The table shows that about one-half of the enterprises have adopted the 8-hour day, while the other half are operated on a 9-hour or 10-hour basis. There is considerable variation in this respect among the several mining industries. The prevailing hours are 8 or less per shift in more than nine-tenths of the deep gold and silver mines, more than five-sixths of the copper mines, about three-fourths of the lead and zinc mines, more than two-thirds of the bituminous coal mines, about three-fifths of the placer mines, and slightly less than one-half of the granite quarries. The 9-hour shift is predominant in anthracite coal mines and the 10-hour day in iron mines, limestone quarries, and the phosphate rock industry. In very few mines do the prevailing hours exceed 10 per shift, the only conspicuous exception being the phosphate rock industry, in which 11 or 12 hours per shift constitute the prevailing hours for over one-fourth of the enterprises.

Table 16

INDUSTRY AND HOURS PER DAY.	ENTERPRISES. Number.	ENTERPRISES. Per cent.	Per cent distribution of enterprises weighted according to number of wage earners.
All industries	12,192	100.0	100.0
8 hours and under	5,876	48.2	44.5
9 hours	1,822	14.9	26.9
10 hours	4,393	36.0	27.5
11 hours	31	0.3	0.3
12 hours	70	0.6	0.8
Coal, anthracite	353	100.0	100.0
8 hours and under	13	3.7	1.7
9 hours	289	81.9	97.9
10 hours	50	14.1	0.4
12 hours	1	0.3	(1)
Coal, bituminous	4,284	100.0	100.0
8 hours and under	2,922	68.2	59.5
9 hours	554	12.9	13.9
10 hours	804	18.8	25.7
12 hours	4	0.1	0.9
Copper	200	100.0	100.0
8 hours	170	85.0	81.8
9 hours	17	8.5	12.5
10 hours	12	6.0	5.3
12 hours	1	0.5	0.3
Iron	293	100.0	100.0
8 hours	15	5.1	2.9
9 hours	19	6.5	3.9
10 hours	254	86.7	90.4
11 hours	4	1.4	1.5
12 hours	1	0.3	0.3
Precious metals, Deep mines	1,302	100.0	100.0
8 hours and under	1,122	91.6	95.4
9 hours	49	3.8	2.7
10 hours	45	3.5	1.7
12 hours	16	1.2	0.2
Precious metals, Placer mines	495	100.0	100.0
8 hours and under	288	58.4	69.5
9 hours	46	9.5	12.2
10 hours	132	28.5	15.0
11 hours	4	0.8	1.6
12 hours	9	1.9	1.7
Lead and zinc	807	100.0	100.0
8 hours and under	597	74.0	82.1
9 hours	130	16.1	8.0
10 hours	70	8.7	9.6
11 hours	1	0.1	0.2
12 hours	9	1.1	0.1
Limestone	1,544	100.0	100.0
8 hours and under	120	7.8	3.4
9 hours	187	12.1	6.3
10 hours	1,231	79.7	88.8
11 hours	4	0.3	0.4
12 hours	2	0.1	1.1
Granite	632	100.0	100.0
8 hours	332	48.0	54.6
9 hours	171	24.7	18.5
10 hours	188	27.2	26.7
11 hours	1	0.1	0.2
Phosphate rock	69	100.0	100.0
8 hours	1	1.4	(1)
10 hours	50	72.5	67.5
11 hours	8	11.6	11.8
12 hours	10	14.5	20.7

[1] Less than one-tenth of 1 per cent.

LAND TENURE.

In mining, as in agriculture, the land is the source from which wealth is drawn, and the control of land is an important factor in mining operations. The Thirteenth Census was the first at which the inquiry into land tenure was extended to all branches of the mining industry. Table 17 gives, for all mining industries combined and for the nine most important industries separately, statistics of the land controlled, distinguishing the character of the land and also the form of tenure.

Table 17 ACREAGE OF LAND CONTROLLED BY PRODUCING ENTERPRISES: 1909

INDUSTRY.	All land.				Mineral and oil land.			Timber land.	Other land.
	Total.	Owned.	Held under lease.	Per cent owned.	Total.	Owned.	Held under lease.		
All industries	**24,215,611**	[1] **9,389,121**	[1] **14,838,179**	**38.8**	**21,414,662**	[2] **6,920,673**	[2] **14,504,964**	**1,138,901**	**1,662,048**
Coal	8,182,749	[1] 5,952,110	[1] 2,242,328	.....	6,847,545	[2] 4,732,556	[2] 2,125,964	435,216	899,988
Anthracite	465,134	[1] 316,867	[1] 159,956	68.1	274,359	[2] 183,144	[2] 102,190	71,351	118,924
Bituminous	7,717,615	5,635,243	2,082,372	73.0	6,573,186	4,549,412	2,023,774	363,365	781,064
Petroleum and natural gas	12,694,838	686,268	12,008,570	5.4	12,694,838	686,268	12,008,570	.....	.....
Copper	275,598	270,771	4,827	98.2	126,851	122,798	4,053	57,781	90,966
Iron	1,313,214	1,064,227	248,987	81.0	387,608	282,661	104,947	456,682	468,924
Precious metals	588,263	461,158	127,105	78.4	409,455	397,097	72,358	33,745	85,063
Lead and zinc	125,322	102,569	22,753	81.8	103,555	81,418	22,137	10,120	11,647
Limestone	128,495	96,084	32,411	74.8	88,152	58,774	20,378	9,176	31,167
Granite	51,398	42,960	8,438	83.6	39,548	32,035	7,513	3,266	8,584
Phosphate rock	340,697	327,726	12,971	96.2	243,221	230,405	12,816	92,580	4,896

[1] Inclusive of 11,689 acres reported both in acreage owned and acreage held under lease.
[2] Inclusive of 10,975 acres reported both in acreage owned and acreage held under lease.

The total acreage of all land controlled by producing enterprises was 24,216,000 acres. Of course, not all of this area was in actual use, large tracts being held in reserve. The greater part of this land was mineral and oil land, but there were 1,139,000 acres of timber land and 1,662,000 acres of other land. Under these two headings are comprised land which had not been prospected and whose mineral resources were still unknown, as well as some land used for building and other purposes.

In comparing the statistics of land controlled for different industries or different states, it should be noted that the area of land is not necessarily an index of the importance of the holdings, as some land is far more rich in minerals than other land.

Of the total area controlled by operators of mining enterprises in 1909, more than one-half was connected with the petroleum and natural gas industries. Of the remainder, by far the largest part was reported for the coal industry. The holdings of the bituminous mines are far more extensive in comparison with the value of the products of those mines than those of the anthracite mines. The holdings of land by operators of iron mines are also very considerable. Some indication of the amount of reserve land held in the different industries is afforded by the proportion reported under the description of "Timber land" and "Other land." This proportion is greatest in the iron industry.

Of the total amount of land controlled by mine operators, 38.8 per cent was owned by the operators themselves and the remainder held under lease. The petroleum and natural gas industry, in which most of the land is held under lease, presents a marked contrast to all the other industries shown in the table. Excluding the land controlled in the petroleum and natural gas industry, operators in other mining industries controlled 11,521,000 acres, of which 8,703,000 acres, or 75.5 per cent, were owned by the operators. The two industries showing the widest departure from this proportion are the copper industry, in which the operators owned 98.2 per cent of the land controlled, and the phosphate rock industry, where the proportion of land owned was 96.2 per cent. The proportions owned in the coal industry and its two branches—72.7 per cent for the industry as a whole, 68.1 per cent for the anthracite branch, and 73 per cent for the bituminous branch—fell somewhat below the proportion given above for all mining industries exclusive of the petroleum and natural gas industry.

FORM OF ORGANIZATION.

Table 18 on the next page has for its purpose the presentation of conditions with respect to the form of organization of producing mining enterprises for all mining industries combined and the nine leading industries separately.

The most important distinction brought out by the table is that between corporate and all other forms of organization. Among 19,915 operators of producing mines, quarries, and wells, 7,041, or 35.4 per cent, were corporations. These incorporated enterprises,

however, employed 90.6 per cent of the wage earners engaged in mining enterprises, and reported 91.4 per cent of the total value of products. Individuals formed 32.1 per cent of the whole number of operators, but they employed only 3.9 per cent of the wage earners and are credited with only 3 per cent of the total value of products. The proportions for firms differ but little from those for individuals, being slightly less in the case of the number of operators and slightly greater in the case of the number of wage earners and the value of products. Moreover, it may be noted that while the average value of products was $160,832 per operator for corporations, it was only $9,136 for firms and only $5,723 for individuals.

Corporations constituted a majority of the operators in the phosphate rock industry (88.2 per cent), the iron industry (73.3 per cent), the copper industry (67.4 per cent), and the coal industry (52.6 per cent). In the copper industry corporations employed 99 per cent of the total number of wage earners. Other industries where a very large percentage of the wage earners were employed by corporations are iron mining (98.1 per cent), the phosphate rock industry (95.8 per cent), and coal mining (93.6 per cent). More than 90 per cent of the total value of products in the mining industry as a whole was credited to corporations. The largest percentages for the individual industries were as follows: The iron industry, 99.6 per cent; the copper industry, 99.1 per cent; the phosphate rock industry, 96.4 per cent; the coal-mining industry, 94.4 per cent; and the precious metal industries, 92.2 per cent. The two quarrying industries—the limestone and granite industries—are the only ones shown in the table in which as much as 25 per cent of the total value of products is credited to other than corporate enterprises.

Table 18

INDUSTRY AND FORM OF ORGANIZATION.	PRODUCING ENTERPRISES: 1909				PER CENT OF TOTAL.		
	Number of operators.	Number of wage earners.	Value of products.		Number of operators.	Wage earners.	Value of products.
			Total.	Per operator.			
All industries	**19,915**	**1,065,283**	**$1,238,419,322**	**$62,185**	**100.0**	**100.0**	**100.0**
Individual	6,387	41,908	36,551,114	5,723	32.1	3.9	3.0
Firm	6,262	50,777	57,209,620	9,136	31.4	4.8	4.7
Corporation	7,041	965,483	1,132,418,758	160,832	35.4	90.6	91.4
Other	225	7,115	12,230,830	54,359	1.1	0.7	0.9
Coal	**3,695**	**743,293**	**577,142,935**	**156,193**	**100.0**	**100.0**	**100.0**
Individual	1,058	17,475	10,460,068	9,915	28.6	2.4	1.8
Firm	664	24,699	17,111,122	25,779	18.0	3.3	3.0
Corporation	1,942	695,985	544,885,841	280,585	52.6	93.6	94.4
Other	31	5,134	4,656,094	150,197	0.8	0.7	0.8
Petroleum and natural gas	**7,793**	**39,831**	**185,416,684**	**23,793**	**100.0**	**100.0**	**100.0**
Individual	2,298	2,020	9,662,086	4,204	29.5	5.1	5.2
Firm	3,360	3,085	18,954,985	5,641	43.1	7.7	10.2
Corporation	1,966	32,636	149,358,498	75,971	25.2	81.9	80.6
Other	169	2,090	7,441,115	44,030	2.2	5.3	4.0
Copper	**161**	**53,143**	**134,616,987**	**836,130**	**100.0**	**100.0**	**100.0**
Individual	26	168	163,908	6,304	16.3	0.3	0.1
Firm	26	344	1,028,831	39,955	16.3	0.7	0.8
Corporation	109	52,631	133,414,248	1,223,984	67.4	99.0	99.1
Iron	**176**	**52,239**	**106,947,092**	**607,654**	**100.0**	**100.0**	**100.0**
Individual	23	481	222,946	9,693	13.1	0.9	0.2
Firm	24	536	291,411	8,392	13.6	1.0	0.2
Corporation	129	51,213	106,522,725	825,757	73.3	98.1	99.6
Precious metals	**2,282**	**37,815**	**94,123,180**	**42,145**	**100.0**	**100.0**	**100.0**
Individual	622	2,591	3,228,424	5,190	27.3	6.9	3.4
Firm	674	2,783	3,997,493	5,931	29.5	7.4	4.2
Corporation	976	32,232	86,750,428	88,884	42.8	85.2	92.2
Other	10	209	146,835	14,684	0.4	0.5	0.2
Lead and zinc	**977**	**21,603**	**31,363,094**	**32,101**	**100.0**	**100.0**	**100.0**
Individual	89	779	824,504	9,264	9.1	3.6	2.6
Firm	522	2,926	3,601,589	6,899	53.4	13.5	11.5
Corporation	366	17,898	26,937,001	73,598	37.5	82.9	85.9
Limestone	**1,665**	**27,695**	**29,832,482**	**17,917**	**100.0**	**100.0**	**100.0**
Individual	911	7,781	4,151,655	4,590	54.7	28.7	14.0
Firm	295	5,178	3,486,343	11,818	17.7	18.7	11.7
Corporation	451	24,551	22,661,746	48,917	27.1	65.1	74.6
Other	8	185	102,748	12,844	0.5	0.5	0.3
Granite	**707**	**20,561**	**13,997,978**	**28,871**	**100.0**	**100.0**	**100.0**
Individual	323	3,745	3,029,150	9,378	45.7	18.2	16.0
Firm	166	3,225	2,987,938	17,879	23.5	15.7	15.6
Corporation	215	13,490	12,923,039	60,107	30.4	65.6	68.0
Other	3	101	77,849	25,950	0.4	0.5	0.4
Phosphate rock	**51**	**8,186**	**10,781,192**	**211,396**	**100.0**	**100.0**	**100.0**
Firm	6	346	389 207	64,868	11.8	4.2	3.6
Corporation	45	7,840	10,391,985	230,933	88.2	95.8	96.4

SIZE OF ENTERPRISES.

The tendency toward concentration in the mining industries can be measured by a classification of mine operators according to the number of wage earners employed or according to the value of the products per operator.

Classification according to number of wage earners.—Table 19, on the next page, gives, for all mineral industries combined and for the most important individual industries, a classification of producing enterprises according to the number of wage earners employed, and shows for each class the number of operators and the number of wage earners. It does not include those mines and quarries which were worked on contract or for a share of the product, nor does it include the petroleum and gas wells which were cared for by part-time employees.

It is worthy of note that the most numerous type of mine operator is the small producer, about three-fifths of all operators employing only from 1 to 20 men each, while more than one-tenth of all operators employed no wage earners at all. On the other hand, more than one-half of the total number of mine workers were employed by operators employing more than 500 men each, although such operators constituted only 1.7 per cent of the total number of operators. The degree of concentration varies in different industries. In anthracite coal mining over five-sixths of all wage earners were employed by the 18 largest operators, each of whom employed 1,000 or more men. Copper mining follows next, three-fourths of the wage earners in this industry being employed by the 12 largest operators, with a force of over 1,000 men each. Iron mining holds the third place, with 9 operators of this class employing more than one-half of the wage earners. There is also a large degree of concentration in bituminous coal mining, where 77 operators of this class, constituting 2.2 per cent of the total number, employed nearly one-half of the wage earners.

In the production of petroleum and natural gas the degree of concentration is not as high as in the mining of coal, iron, and copper; the 8 largest operators, however, employed over two-fifths of the wage earners. On the other hand, in precious metal mining, lead and zinc mining, and stone quarrying, small-scale production is still the predominant type.

Table 19

INDUSTRY AND NUMBER OF WAGE EARNERS[1] PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Wage earners.[1]	
	Number.	Per cent distribution.	Number.	Per cent distribution.
All industries	16,657	100.0	1,065,283	100.0
No wage earners	2,187	13.1		
1 to 5	6,292	37.8	14,788	1.4
6 to 20	3,837	23.0	43,083	4.0
21 to 50	1,973	11.8	64,327	6.0
51 to 100	983	5.9	71,045	6.7
101 to 500	1,105	6.6	242,999	22.8
501 to 1,000	155	0.9	110,191	10.3
Over 1,000	125	0.8	518,850	48.7
Anthracite coal	192	100.0	173,504	100.0
No wage earners	7	3.6		
1 to 5	39	20.3	102	0.1
6 to 20	28	14.6	317	0.2
21 to 50	19	9.9	612	0.3
51 to 100	19	9.9	1,459	0.8
101 to 500	44	22.9	12,082	7.0
501 to 1,000	18	9.4	11,857	6.8
Over 1,000	18	9.4	147,075	84.8
Bituminous coal	3,476	100.0	569,789	100.0
No wage earners	23	0.7		
1 to 5	600	17.3	2,102	0.4
6 to 20	939	27.0	10,183	1.8
21 to 50	575	16.5	18,988	3.3
51 to 100	466	13.4	33,820	5.9
101 to 500	693	19.9	156,523	27.5
501 to 1,000	103	3.0	73,517	12.9
Over 1,000	77	2.2	274,596	48.2
Petroleum and natural gas	4,772	100.0	39,831	100.0
No wage earners	1,324	27.7		
1 to 5	2,749	57.6	4,875	12.2
6 to 20	519	10.9	5,313	13.3
21 to 50	104	2.2	3,144	7.9
51 to 100	40	0.8	2,823	7.1
101 to 500	28	0.6	5,687	14.3
Over 500	8	0.2	17,989	45.2
Copper	158	100.0	53,143	100.0
No wage earners	8	5.1		
1 to 5	48	30.4	144	0.3
6 to 20	30	19.0	360	0.7
21 to 50	17	10.8	579	1.1
51 to 100	16	10.1	1,248	2.3
101 to 500	19	12.0	4,998	9.4
501 to 1,000	8	5.1	5,508	10.4
Over 1,000	12	7.6	40,306	75.8
Iron	173	100.0	52,230	100.0
No wage earners	4	2.3		
1 to 5	12	6.9	39	0.1
6 to 20	30	17.4	374	0.7
21 to 50	36	20.8	1,227	2.4
51 to 100	24	13.9	1,742	3.3
101 to 500	49	28.3	11,399	21.8
501 to 1,000	9	5.2	7,132	13.7
Over 1,000	9	5.2	30,317	58.0
Precious metals	2,169	100.0	37,815	100.0
No wage earners	378	17.4		
1 to 5	913	42.1	2,330	6.2
6 to 20	527	24.3	5,802	15.3
21 to 50	203	9.4	6,648	17.6
Over 50	148	6.8	23,035	60.9
Lead and zinc	950	100.0	21,603	100.0
No wage earners	133	14.0		
1 to 5	293	30.9	814	3.8
6 to 20	289	30.4	3,500	16.2
21 to 50	184	19.4	5,910	27.4
51 to 100	30	4.1	2,691	12.4
101 to 500	5	0.5	825	3.8
501 to 1,000	4	0.4	3,346	15.5
Over 1,000	3	0.3	4,517	20.9
Limestone	1,642	100.0	37,695	100.0
No wage earners	96	5.9		
1 to 5	565	34.4	1,453	3.8
6 to 20	526	32.0	6,168	16.4
21 to 50	282	17.2	9,201	24.4
51 to 100	104	6.3	7,432	19.7
Over 100	69	4.2	13,441	35.7
Granite	704	100.0	20,561	100.0
No wage earners	10	1.4		
1 to 5	199	28.3	638	3.1
6 to 20	265	37.6	3,069	14.9
21 to 50	132	18.8	4,367	21.3
51 to 100	53	7.5	3,830	18.6
Over 100	45	6.4	8,657	42.1
Phosphate rock	51	100.0	8,186	100.0
1 to 5 wage earners	2	3.9	17	0.2
6 to 20	11	21.6	179	2.2
21 to 50	11	21.6	463	5.7
51 to 100	6	11.8	1,024	12.5
Over 100	21	41.2	6,503	79.4

[1] Based on number reported for Dec. 15, 1909, or nearest representative day.

A marked distinction with respect to the degree of concentration exists between regular producing mines, quarries, and wells, on the one hand, and nonproducing properties which are still in the development stage, on the other.

About two-thirds of all the wage earners engaged in the development of new mining properties were employed by small operators, or those employing not exceeding 20 wage earners each. The largest enterprises in this class were represented by 12 operators employing from 101 to 500 wage earners each. On the other hand, more than one-half of all wage earners engaged in producing mines were employed by operators with a working force of 500 men or over.

Table 20 shows the distribution of operators according to the number of wage earners for producing and nonproducing properties separately.

Table 20

WAGE EARNERS[1] PER OPERATOR.	PRODUCING ENTERPRISES.				NONPRODUCING ENTERPRISES.			
	Operators.		Wage earners.[1]		Operators.		Wage earners.[1]	
	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.	Number.	Per cent distribution.
Total	16,657	100.0	1,065,283	100.0	3,395	100.0	21,499	100.0
No wage earners	2,187	13.1			196	5.8		
1 to 5	6,292	37.8	14,788	1.4	2,253	66.4	6,207	28.9
6 to 20	3,837	23.0	43,083	4.0	779	23.0	7,659	35.6
21 to 50	1,973	11.8	64,327	6.0	127	3.7	3,751	17.5
51 to 100	983	5.9	71,045	6.7	28	0.8	1,961	9.1
101 to 500	1,105	6.6	242,999	22.8	12	0.3	1,921	8.9
501 to 1,000	155	0.9	110,191	10.3				
Over 1,000	125	0.8	518,850	48.7				

[1] Based on number reported for Dec. 15, 1909, or nearest representative day.

Classification according to value of products.—Table 21 gives, for all mining industries and for the most important industries separately, a classification of the operators according to value of products per operator, and shows, for each class, the number of operators and the total value of products.

Table 21

INDUSTRY AND VALUE OF PRODUCTS PER OPERATOR.	PRODUCING ENTERPRISES: 1909			
	Operators.		Value of products.	
	Number.	Per cent distribution.	Amount.	Per cent distribution.
All industries	19,915	100.0	$1,238,410,322	100.0
Less than $5,000	11,384	57.2	18,518,939	1.5
$5,000 to $20,000	4,276	21.5	43,997,158	3.6
$20,000 to $100,000	2,840	14.3	128,309,227	10.4
$100,000 to $1,000,000	1,251	6.3	335,247,982	27.1
$1,000,000 and over	164	0.8	712,277,016	57.5
Coal	3,695	100.0	577,142,935	100.0
Less than $5,000	1,175	31.8	2,921,829	0.6
$5,000 to $20,000	919	24.9	9,557,288	1.6
$20,000 to $100,000	885	23.9	44,005,693	7.6
$100,000 to $1,000,000	631	17.1	172,161,675	29.8
$1,000,000 and over	85	2.3	348,496,450	60.4
Anthracite coal	192	100.0	149,180,471	100.0
Less than $5,000	59	30.7	95,226	0.1
$5,000 to $20,000	24	12.5	288,261	0.2
$20,000 to $100,000	38	19.8	2,153,644	1.4
$100,000 to $1,000,000	54	28.1	21,020,422	14.1
$1,000,000 and over	17	8.9	125,622,918	84.2
Bituminous coal	3,503	100.0	427,962,464	100.0
Less than $5,000	1,116	31.9	2,826,603	0.6
$5,000 to $20,000	895	25.5	9,269,027	2.2
$20,000 to $100,000	847	24.2	41,852,049	9.8
$100,000 to $1,000,000	577	16.5	151,141,253	35.3
$1,000,000 and over	68	1.9	222,873,532	52.1
Petroleum and natural gas	7,793	100.0	185,416,684	100.0
Less than $5,000	5,446	69.9	8,890,708	4.8
$5,000 to $20,000	1,506	19.3	14,812,243	8.0
$20,000 to $100,000	638	8.2	26,924,025	14.5
$100,000 to $1,000,000	184	2.4	49,198,036	26.5
$1,000,000 and over	19	0.2	85,591,672	46.2
Copper	161	100.0	134,616,987	100.0
Less than $5,000	68	42.2	83,082	0.1
$5,000 to $20,000	32	20.0	337,175	0.2
$20,000 to $100,000	18	11.2	725,467	0.5
$100,000 to $1,000,000	22	13.7	8,708,533	6.5
$1,000,000 and over	21	13.0	124,762,730	92.7
Iron	176	100.0	106,947,092	100.0
Less than $5,000	42	23.9	54,063	0.1
$5,000 to $20,000	34	19.3	363,950	0.3
$20,000 to $100,000	47	26.7	2,416,815	2.3
$100,000 to $1,000,000	38	21.6	14,023,823	13.1
$1,000,000 and over	15	8.5	90,089,331	84.2
Precious metals	2,282	100.0	94,123,180	100.0
Less than $5,000	1,571	68.8	1,775,236	1.9
$5,000 to $20,000	347	15.2	3,599,027	3.8
$20,000 to $100,000	205	9.1	9,226,391	9.8
$100,000 to $1,000,000	140	6.2	38,764,156	41.1
$1,000,000 and over	16	0.7	40,815,456	43.4
Lead and zinc	977	100.0	31,383,894	100.0
Less than $5,000	531	54.4	901,363	2.9
$5,000 to $20,000	231	23.6	2,407,108	7.7
$20,000 to $100,000	173	17.7	7,776,942	24.8
$100,000 to $1,000,000	38	3.9	7,339,293	23.4
$1,000,000 and over	4	0.4	12,938,478	41.2
Limestone	1,665	100.0	29,332,492	100.0
Less than $5,000	940	56.5	1,370,469	4.6
$5,000 to $20,000	401	24.1	4,177,822	14.0
$20,000 to $100,000	270	16.2	12,318,129	42.3
$100,000 to $1,000,000	54	3.2	11,466,072	39.1
Granite	707	100.0	18,997,976	100.0
Less than $5,000	276	39.0	585,023	3.1
$5,000 to $20,000	235	33.2	2,590,945	13.6
$20,000 to $100,000	149	21.1	6,425,992	33.8
$100,000 to $1,000,000	47	6.7	9,396,016	49.5
Phosphate rock	51	100.0	10,781,192	100.0
Less than $5,000	9	17.6	21,132	0.2
$5,000 to $20,000	11	21.6	106,689	1.0
$20,000 to $100,000	8	15.7	445,855	4.1
$100,000 and over	23	45.1	10,207,525	94.7

The relative importance of small-scale and large-scale production in mining can be seen from the fact that the 11,384 operators reporting products valued at less than $5,000, though they constituted 57.2 per cent of the total number of operators, reported only 1.5 per cent of the total value of products, while the 164 operators reporting products valued at more than $1,000,000, though they formed less than 1 per cent of the whole number of operators, reported 57.5 per cent of the total value of products. The degree of concentration varies in the different industries, operators reporting products of more than $1,000,000 in value contributing 92.7 per cent, as measured by value, of the copper product, 84.2 per cent of the iron ore, 84.2 per cent of the anthracite coal, 52.1 per cent of the bituminous coal, 46.2 per cent of the petroleum and natural gas, 43.4 per cent of the precious metals, and 41.2 per cent of the lead and zinc. In the phosphate rock industry which reported a total value of products of $10,781,192 there was one operator whose products were valued at more than $1,000,000. The other mining industries do not show so high a degree of concentration.

EXPENSES.

The census does not purport to furnish figures which can be used for determining profits or exact cost of production.

Table 22 shows, however, for 1909, in percentages, the distribution of expenses in producing enterprises by classes for all mining industries combined and for the most important industries separately. This table shows that for all industries combined 61.4 per cent of the total expenses were incurred for services—that is, salaries and wages—23.8 per cent for supplies, materials, and fuel, 6.1 per cent for royalties and rent of mines, and 8.7 per cent for all other purposes.

Table 22

INDUSTRY.	PER CENT OF TOTAL EXPENSES REPORTED FOR PRODUCING ENTERPRISES.[1]				
	Salaries.	Wages.	Supplies, materials, and fuel.	Royalties and rent of mines.	Miscellaneous.
All industries	5.1	56.3	23.8	6.1	8.7
Coal:					
Anthracite	3.2	66.3	19.2	5.7	5.6
Bituminous	5.5	74.3	12.1	3.1	5.0
Petroleum and natural gas	5.3	20.0	37.8	15.7	21.2
Copper	3.4	45.9	44.2	1.7	4.8
Iron	4.6	40.1	23.3	20.5	11.5
Precious metals	5.6	44.4	37.7	1.7	10.6
Lead and zinc	4.1	43.2	37.6	9.4	5.7
Limestone	7.2	59.0	22.0	2.0	9.7
Granite	6.6	68.6	16.6	1.2	7.0
Phosphate rock	8.0	43.3	30.4	4.7	13.6

[1] For absolute figures on which these percentages are based, see Table 28, p. 560.

As would be expected, the proportions vary considerably in the different industries. The largest percentage for services (79.8) is shown for the bituminous branch of the coal-mining industry, the smallest percentage (25.3) being reported for the petroleum and natural gas industry. The proportion for supplies, materials, and fuel varies from 44.2 per cent for the copper industry to 12.1 per cent for bituminous coal mining; the proportion for royalties and rent of mines, from 20.5 per cent for iron mining to 1.2 per cent for granite quarrying; and the proportion for miscellaneous expenses, from 21.2 per cent for the petroleum and natural gas industry to 4.8 per cent for the copper industry.

POWER.

Table 23 shows, for all mining industries and for the most important industries separately, the number of engines or other motors, according to their character, employed in generating power (including electric motors operated by purchased current), and their total horsepower. It also shows separately the number and horsepower of electric motors which were run by current generated by the same establishment.

Table 23 PRODUCING ENTERPRISES: 1909

INDUSTRY.	Primary power.										Electric motors run by current generated by same establishment.	
	Aggregate horsepower.	Owned.						Electric motors operated by rented current.			
		Total horsepower.	Steam engines.		Gas or gasoline engines.		Water wheels.					
			Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.	Number.	Horsepower.
All industries	4,608,253	4,402,554	70,573	3,786,552	23,296	518,542	908	97,460	4,770	205,699	14,203	493,721
Coal	1,904,154	1,877,450	19,318	1,874,001	374	3,101	9	348	872	26,704	10,869	375,286
Anthracite	676,753	675,343	7,580	674,571	25	772	.....	.....	32	1,410	1,152	46,088
Bituminous	1,227,401	1,202,107	11,738	1,199,430	349	2,329	9	348	840	25,294	9,717	329,298
Petroleum and natural gas	1,221,909	1,221,809	30,928	746,658	21,762	475,151	.....	.....	0	100	454	8,589
Copper	376,464	324,178	699	303,848	71	2,325	15	18,005	819	52,286	536	25,888
Iron	346,534	342,069	3,563	326,753	27	2,051	30	12,665	55	4,465	326	13,295
Precious metals	228,244	144,502	1,074	84,953	429	9,090	704	49,853	2,142	83,742	574	16,054
Lead and zinc	110,550	107,276	2,153	94,220	214	12,987	3	60	59	3,283	361	12,048
Limestone	125,024	115,573	2,166	112,300	110	2,911	9	272	200	9,451	170	5,291
Granite	61,095	54,213	1,346	52,549	65	1,142	6	522	159	6,882	57	1,346
Phosphate rock	50,526	50,426	549	46,817	32	3,600	.....	.....	1	100	339	21,388

Of the total primary power used in mining, 4,402 554 horsepower, or 95.5 per cent, was owned by the mine operators, only 205,699 horsepower, all of which was electric power, being rented. The total amount of electric power used, including that generated at the mines, aggregated 699,420 horsepower. Nearly three-fourths of the total rented power was reported from the Mountain and Pacific states, where the abundance of water power and the scarcity of coal makes the transmission of electric power profitable. The ownership of water power by mine operators was insignificant, except in the production of the precious metals, which is mainly confined to the group of states above mentioned. Of the horsepower generated by gas or gasoline engines, 91.6 per cent was utilized in the petroleum and natural gas industry.

QUANTITY OF MINERALS.

The statistics relating to quantity of minerals were collected in cooperation with the United States Geological Survey, but the results given in Table 24 vary slightly from those published by that bureau. The latter relate in every case to the calendar year 1909, whereas the census data are for the business year of each establishment, to accord with the statistics of persons employed in mining industries as well as with the expenses incurred. Moreover, the figures presented in the table deal with products sold or used by the mine operators, whereas the statistics of the United States Geological Survey in many cases show the quantities actually produced during the calendar year.

For metalliferous, other than iron, mines the United States Geological Survey publishes the quantities of metals recovered by refineries which the ore ultimately reaches, whereas Table 24 relates to the crude products sold by mine operators. Thus the gold content of all domestic ore mined in continental United States, and sold in the crude state, together with the assay content of mill and placer bullion, as given in the table, aggregated 3,876,943 fine ounces, whereas the production of refined gold in continental United States, as estimated by the United States Geological Survey in cooperation with the Director of the Mint, was 3,837,773 ounces; the difference does not exceed 1

per cent of the total production. Likewise, the assay content of all silver ore and mill and placer bullion produced in the United States, as reported by mine operators, was 57,294,492 ounces, whereas the total production of refined bullion in the United States, including Alaska, as estimated by the Director of the Mint and reported by refineries to the Bureau of the Census, aggregated in round figures 54,500,000 fine ounces, the variance being due in greater part to losses in recovery.

No quantities for structural materials are presented in the table below, by reason of the great diversity in the units of measure, depending on quality as well as on the uses for which the stone is intended. The only common measure for the production of building stone is value.

Where the products of a given industry were marketed by some establishments in crude state and by others in dressed or refined state, the figures below are presented as reported by the operators.

Table 24

PRODUCT.	Unit of measure.	Total.	Crude.	Dressed or refined.
FUELS:				
Coal, anthracite	Tons, 2,000 lbs.	80,968,130	.....	.....
Coal, bituminous	Tons, 2,000 lbs.	376,865,510	.....	.....
Petroleum	Barrels	171,557,485	171,557,485	.....
Natural gas	M cubic feet	430,956,406	.....	.....
Peat	Tons, 2,000 lbs.	15,671	1,254	14,417
METALS:[1]				
Iron	Tons, 2,240 lbs.	50,521,208	50,521,208	.....
Gold, total[2]	Fine ounces	4,860,871	.....	.....
Continental U. S.	Fine ounces	3,876,943	.....	.....
Alaska	Fine ounces	983,928	.....	.....
Silver	Fine ounces	57,294,492	.....	.....
Copper, total	Pounds	1,089,800,000	.....	.....
Lake[3]	Pounds	234,137,051	.....	234,137,051
Western[4]	Pounds	855,662,949	855,662,949	.....
Lead:				
Argentiferous[4]	Pounds	434,880,257	434,880,257	.....
Nonargentiferous	Tons, 2,000 lbs[5].	249,935	249,935	.....
Zinc:				
Argentiferous[4]	Pounds	98,882,379	98,882,379	.....
Nonargentiferous	Tons, 2,000 lbs[5].	818,821	818,821	.....
Quicksilver	Pounds net	1,563,675	.....	1,563,675
Manganese	Tons, 2,240 lbs.	1,544	1,544	.....
Tungsten	Tons, 2,000 lbs.	1,619	1,619	.....
MISCELLANEOUS:				
Asbestos	Tons, 2,000 lbs.	3,233	2,330	903
Barytes	Tons, 2,000 lbs.	48,984	42,979	6,005
Bauxite	Tons, 2,000 lbs.	142,341	134,641	7,700
Clay	Tons, 2,000 lbs.	2,159,647	2,159,647	.....
Corundum and emery	Tons, 2,000 lbs.	1,580	628	952
Feldspar	Tons, 2,000 lbs.	76,539	31,037	45,502
Fluorspar	Tons, 2,000 lbs.	48,750	46,319	2,431
Fullers' earth	Tons, 2,000 lbs.	43,189	19,891	23,298
Garnet	Tons, 2,000 lbs.	2,922	80	2,842
Graphite	Tons, 2,000 lbs.	16,222	13,248	2,974
Gypsum	Tons, 2,000 lbs.	1,545,000	346,069	1,198,931
Mica:				
Sheet	Pounds	1,809,582	1,809,582	.....
Scrap	Tons, 2,000 lbs.	4,090	.....	4,090
Monazite and zircon	Tons, 2,000 lbs.	268	.....	268
Phosphate rock	Tons, 2,240 lbs.	2,220,623	2,220,623	.....
Pumice	Tons, 2,000 lbs.	15,103	15,103	.....
Pyrite	Tons, 2,240 lbs.	247,070	247,070	.....
Quartz	Tons, 2,000 lbs.	117,578	106,248	11,330
Sulphur	Tons, 2,000 lbs.	268,029	268,029	.....
Talc and soapstone	Tons, 2,000 lbs.	120,837	30,938	89,899

[1] See explanation in the text.
[2] Assay content of mill bullion and ore shipped.
[3] Metallic copper.
[4] Assay content of ore.
[5] Concentrate.

PRODUCING MINES, QUARRIES, AND WELLS[1]—COMPARATIVE SUMMARY FOR THE UNITED STATES, BY STATES: 1909 AND 1902.

Table 25

GEOGRAPHIC DIVISION AND STATE.	Census.	PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT.				Value of products.[2]	Primary horsepower.	PER CENT OF INCREASE.			
		Salaries and wages.	Supplies, materials, and fuel.[2]	Royalties and rent of mines.	Contract work.			Salaries and wages.	Royalties and rent of mines.	Value of products.	Horsepower.
United States[3]	**1909**	**[4]$625,610,068**	**$208,771,046**	**$62,456,760**	**$34,061,986**	**$1,175,475,001**	**4,556,176**	**55.9**	**81.2**	**52.4**	**71.6**
	1902	**401,225,547**	**114,515,832**	**34,476,227**	**20,638,127**	**771,486,926**	**2,663,964**				
GEOGRAPHIC DIVISIONS:											
New England	1909	11,093,136	3,903,951	190,947	120,440	19,312,271	60,120	5.8	6.8	16.3	37.7
	1902	10,484,388	2,638,713	178,812	1,853	16,608,696	43,670				
Middle Atlantic	1909	212,534,186	54,917,283	15,928,491	6,048,025	353,775,079	1,748,375	68.2	42.3	47.2	46.7
	1902	127,847,309	31,582,205	11,190,610	5,959,507	240,365,682	1,191,487				
East North Central	1909	129,342,721	34,944,431	12,338,469	5,882,397	233,002,528	919,427	44.9	26.7	34.8	50.8
	1902	89,261,566	25,966,245	9,024,556	4,959,358	172,894,450	609,641				
West North Central	1909	55,134,454	21,116,725	14,720,084	2,709,833	129,023,910	371,543	62.2	158.6	78.6	206.5
	1902	33,998,514	9,936,373	5,691,636	770,773	72,257,703	120,421				
South Atlantic	1909	53,154,421	18,226,801	8,638,145	4,665,497	102,375,877	532,824	66.5	90.1	47.9	81.9
	1902	31,916,461	11,496,991	4,544,772	5,374,382	69,202,161	292,981				
East South Central	1909	31,848,088	6,843,506	1,374,027	976,571	45,394,609	180,502	41.2	79.5	33.2	210.5
	1902	22,559,863	3,941,987	765,974	661,402	34,820,772	58,122				
West South Central	1909	9,221,489	4,368,820	1,608,985	303,062	22,406,222	55,199	85.3	348.7	127.2	152.4
	1902	4,976,130	1,216,670	358,555	1,491,266	9,857,264	21,873				
Mountain	1909	82,758,040	36,741,950	1,880,957	728,712	176,309,955	299,398	45.1	18.0	51.7	80.9
	1902	57,029,455	20,390,291	1,593,738	770,931	112,270,912	220,774				
Pacific	1909	28,627,961	21,956,212	2,973,092	523,657	71,076,741	184,172	57.9	270.2	96.9	116.2
	1902	18,128,437	6,557,854	803,039	570,016	36,092,355	85,203				

[1] Exclusive of governmental institutions, and of the coke and cement industries, but including figures for the lime industry.
[2] Exclusive of duplications resulting from the use of products of some enterprises as materials for others within the same industry.
[3] Embraces Oklahoma, Rhode Island, and South Carolina for both years and the District of Columbia for 1909. These states are not shown separately nor are they included in the totals for their respective geographic divisions, because to do so would disclose individual operations.
[4] Exclusive of the amount paid to miners compensated by a share of the product for both years, and also of the wages of part-time employees for the petroleum and natural gas industries for 1909, which are included under "Contract work" in other tables for 1909.

PRODUCING MINES, QUARRIES, AND WELLS [1]—COMPARATIVE SUMMARY FOR THE UNITED STATES, BY STATES 1909 AND 1902—Continued.

Table 25—Continued.

GEOGRAPHIC DIVISION AND STATE.	Census.	PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT.				Value of products.[2]	Primary horsepower.	PER CENT OF INCREASE.[3]			
		Salaries and wages.	Supplies, materials, and fuel.[2]	Royalties and rent of mines.	Contract work.			Salaries and wages.	Royalties and rent of mines.	Value of products.	Horsepower.
NEW ENGLAND:											
Maine	1909	$1,696,617	$1,032,965	$22,279	$14,448	$3,270,766	8,345	−31.5	75.2	−10.5	20.3
	1902	2,478,603	476,964	12,714	.....	3,656,134	6,930	.....	.....	.....	.....
New Hampshire	1909	979,840	155,358	4,271	9,246	1,308,597	3,771	11.9	80.1	11.2	44.1
	1902	875,465	134,128	2,372	.....	1,176,312	2,617	.....	.....	.....	.....
Vermont	1909	4,899,736	1,386,827	85,632	64,988	8,471,725	25,916	40.4	−15.7	43.5	73.0
	1902	3,490,476	1,076,143	101,546	.....	5,904,705	14,979	.....	.....	.....	.....
Massachusetts	1909	2,516,534	854,090	58,580	18,637	4,332,218	15,620	−8.1	32.2	−3.7	39.8
	1902	2,739,230	727,665	44,325	1,853	4,499,401	11,170	.....	.....	.....	.....
Connecticut	1909	1,000,409	474,711	20,176	13,121	1,928,965	9,408	11.1	13.0	40.6	−18.8
	1902	900,614	223,813	17,855	.....	1,372,144	7,965	.....	.....	.....	.....
MIDDLE ATLANTIC:											
New York	1909	5,093,286	2,647,861	468,646	374,435	13,840,494	102,540	26.0	31.0	43.0	60.3
	1902	4,517,851	1,027,489	357,637	350,663	9,682,457	63,953	.....	.....	.....	.....
New Jersey	1909	3,155,929	1,007,226	101,523	40,799	8,548,858	18,300	38.6	−7.8	111.5	41.4
	1902	2,277,652	892,030	110,163	10,770	4,042,047	13,008	.....	.....	.....	.....
Pennsylvania	1909	203,684,971	51,202,196	15,358,322	5,632,791	331,376,718	1,027,445	68.3	43.2	46.2	46.0
	1902	121,051,866	29,002,086	10,722,810	5,598,074	226,641,178	1,114,526	.....	.....	.....	.....
EAST NORTH CENTRAL:											
Ohio	1909	30,226,878	8,850,679	3,668,862	2,745,089	59,931,837	298,635	18.6	−12.4	6.4	46.1
	1902	25,479,977	9,836,370	4,190,544	2,692,557	56,340,184	204,341	.....	.....	.....	.....
Indiana	1909	16,092,359	2,557,423	595,475	265,259	22,324,647	95,929	36.1	−67.1	−17.0	−20.4
	1902	11,819,897	3,389,898	1,807,948	2,159,980	26,896,393	120,511	.....	.....	.....	.....
Illinois	1909	49,838,660	9,073,037	3,579,960	2,300,424	77,214,343	226,124	74.6	654.5	106.6	155.5
	1902	28,539,154	3,315,552	474,475	26,016	37,377,226	88,500	.....	.....	.....	.....
Michigan	1909	29,344,947	11,898,740	4,043,981	472,605	64,956,209	271,801	37.0	75.2	35.3	47.5
	1902	21,277,047	8,637,172	2,311,479	77,047	48,022,962	184,278	.....	.....	.....	.....
Wisconsin	1909	3,339,877	1,604,543	445,191	39,020	8,575,402	26,848	70.0	85.4	101.4	123.5
	1902	2,145,491	787,253	240,110	3,768	4,257,685	12,011	.....	.....	.....	.....
WEST NORTH CENTRAL:											
Minnesota	1909	13,592,568	8,904,544	10,732,309	2,157,108	58,975,781	152,153	97.4	191.7	130.2	434.0
	1902	6,887,017	2,839,332	3,678,904	339,244	25,620,677	28,492	.....	.....	.....	.....
Iowa	1909	11,461,923	1,561,553	349,470	40,791	13,979,453	23,528	57.5	58.3	44.7	60.4
	1902	7,279,272	961,414	220,698	48,106	9,659,330	14,673	.....	.....	.....	.....
Missouri	1909	15,667,995	7,071,060	1,955,492	135,384	30,378,747	109,971	56.9	39.8	49.8	137.1
	1902	9,980,027	2,856,858	1,308,827	172,514	20,279,481	46,384	.....	.....	.....	.....
North Dakota	1909	426,910	108,187	10,647	1,325	564,812	2,025	84.8	656.7	73.3	141.3
	1902	231,014	86,467	1,407	2,795	325,967	839	.....	.....	.....	.....
South Dakota	1909	3,446,944	1,496,495	4,776	50	6,415,788	15,648	−4.1	−45.3	−4.2	27.6
	1902	3,593,242	1,062,937	8,736	406	6,697,797	12,265	.....	.....	.....	.....
Nebraska	1909	186,582	57,493	1,551	5,494	322,517	815	79.5	88.4	117.3	175.3
	1902	103,936	11,173	823	.....	148,391	296	.....	.....	.....	.....
Kansas	1909	10,351,532	1,017,384	1,605,839	669,681	18,386,812	67,408	75.0	335.8	93.0	285.8
	1902	5,915,006	1,218,192	382,181	207,708	9,526,060	17,472	.....	.....	.....	.....
SOUTH ATLANTIC:											
Delaware	1909	287,742	178,432	4,392	5,800	516,213	1,480	14.8	−72.9	15.1	6.0
	1902	250,669	45,361	16,187	.....	448,467	1,396	.....	.....	.....	.....
Maryland	1909	3,816,561	714,571	136,772	11,148	6,164,122	10,060	−18.7	−3.4	−13.9	53.7
	1902	4,696,260	807,706	141,570	8,499	7,162,113	12,400	.....	.....	.....	.....
Virginia	1909	5,501,589	1,855,201	421,803	119,043	8,999,920	35,554	41.9	32.3	43.3	128.8
	1902	3,876,556	837,287	318,703	35,964	6,280,148	15,539	.....	.....	.....	.....
West Virginia	1909	38,177,028	12,801,951	7,796,597	4,307,288	73,452,935	417,282	91.8	101.2	51.8	73.7
	1902	19,905,757	8,513,707	3,874,780	5,194,270	48,362,604	240,170	.....	.....	.....	.....
North Carolina	1909	1,005,826	208,315	21,412	3,340	1,402,765	6,225	67.6	7.2	51.7	66.2
	1902	599,959	118,494	19,971	9,000	924,676	3,746	.....	.....	.....	.....
Georgia	1909	1,495,562	415,841	59,317	1,187	2,924,741	10,848	17.2	41.2	−5.0	15.7
	1902	1,276,362	556,220	42,008	122,619	3,080,287	9,373	.....	.....	.....	.....
Florida	1909	2,870,113	1,992,490	197,702	217,691	8,916,181	42,375	118.9	50.4	202.8	309.1
	1902	1,310,808	618,057	131,493	4,021	2,943,806	10,357	.....	.....	.....	.....
EAST SOUTH CENTRAL:											
Kentucky	1909	8,800,326	1,537,544	422,702	165,913	12,100,005	53,480	51.7	170.0	45.7	186.3
	1902	5,802,221	1,110,291	156,562	219,627	8,304,706	18,682	.....	.....	.....	.....
Tennessee	[4] 1909	8,054,131	1,638,019	618,177	43,623	11,803,400	34,376	46.9	49.2	27.4	186.3
	1902	5,483,714	835,754	414,367	174,496	9,268,074	12,007	.....	.....	.....	.....
Alabama	1909	14,993,631	3,667,943	333,148	767,035	22,491,204	92,647	33.0	70.8	30.4	237.7
	1902	11,273,028	1,995,942	195,045	267,270	17,247,992	27,433	.....	.....	.....	.....
WEST SOUTH CENTRAL:											
Arkansas	1909	3,325,154	585,357	194,179	111,974	4,764,784	14,217	55.6	375.7	67.8	92.2
	1902	2,137,007	244,379	40,818	860	2,840,341	7,396	.....	.....	.....	.....
Louisiana	1909	1,199,658	1,586,427	496,108	60,310	6,539,850	8,445	2,757.9	2,038.1	2,241.3	90.2
	1902	41,977	7,354	23,207	105,858	279,327	4,440	.....	.....	.....	.....
Texas	1909	4,696,677	2,197,036	918,608	130,778	11,095,588	32,537	67.9	211.9	64.7	204.2
	1902	2,797,146	964,937	294,530	1,384,548	6,737,696	10,037	.....	.....	.....	.....
MOUNTAIN:											
Idaho	1909	4,444,259	2,225,762	27,632	22,665	8,749,650	26,303	−0.8	−1.7	6.5	41.0
	1902	4,480,194	1,626,153	28,103	43,442	8,214,071	18,703	.....	.....	.....	.....
Colorado	1909	19,959,195	7,273,027	1,017,847	123,828	30,397,859	98,777	−7.2	−4.4	−2.7	19.0
	1902	21,518,169	6,969,796	1,064,653	393,985	40,508,286	83,039	.....	.....	.....	.....
All other [5]	1909	58,354,586	27,242,261	835,478	582,219	122,150,446	274,258	88.1	66.8	92.2	130.4
	1902	31,031,092	11,794,342	500,982	333,504	63,547,055	119,032	.....	.....	.....	.....
PACIFIC:											
Washington	1909	6,342,392	1,196,670	141,231	23,849	10,826,503	20,987	56.1	149.7	100.7	76.2
	1902	4,063,773	615,807	56,558	20,600	5,393,659	11,910	.....	.....	.....	.....
Oregon	1909	854,979	296,489	16,035	3,240	1,237,292	8,070	−30.0	−72.0	−40.7	114.6
	1902	1,222,178	408,112	60,499	19,522	2,087,389	3,761	.....	.....	.....	.....
California	1909	21,430,590	20,463,053	2,814,926	496,568	59,012,946	155,115	66.9	310.3	106.3	123.1
	1902	12,842,486	5,533,935	685,982	520,894	28,611,307	69,532	.....	.....	.....	.....

[1] Exclusive of governmental institutions, and of the coke and cement industries, but including figures for the lime industry.
[2] Exclusive of duplications resulting from the use of products of some enterprises as materials for others within the same industry.
[3] A minus sign (−) denotes decrease.
[4] Includes a small production of bituminous coal for Georgia.
[5] Embraces Arizona, Montana, Nevada, New Mexico, Utah, and Wyoming.

PRODUCING MINES, QUARRIES, AND WELLS[1]—COMPARATIVE SUMMARY FOR THE UNITED STATES, BY INDUSTRIES: 1909 AND 1902.

Table 26

INDUSTRY.	Census.	PRINCIPAL EXPENSES OF OPERATION AND DEVELOPMENT.				Value of products.[2]	Primary horsepower.	PER CENT OF INCREASE.[4]			
		Salaries and wages.	Supplies, materials, and fuel.[2]	Royalties and rent of mines.	Contract work.[3]			Salaries and wages.	Royalties and rent of mines.	Value of products.	Horsepower.
All industries[5]	1909	$625,610,068	$208,771,046	$62,456,760	$24,091,986	$1,175,475,001	4,556,170	55.9	81.2	52.4	71.0
	1902	401,225,547	114,515,832	34,476,227	20,638,127	771,486,926	2,663,964				
FUELS:											
Coal, total	1909	399,697,241	72,043,898	20,016,639	3,893,257	550,513,866	1,904,154	68.3	69.6	50.2	109.4
	1902	237,557,596	37,517,821	11,799,559	1,650,535	366,642,015	909,160				
Anthracite	1909	96,900,963	26,697,966	7,980,739	1,701,514	149,180,471	676,753	132.8	83.1	95.8	62.7
	1902	41,623,406	12,740,780	4,359,051	406,421	76,173,586	416,012				
Bituminous	1909	302,796,278	45,345,932	12,035,900	2,191,743	401,333,395	1,227,401	54.5	61.8	38.2	148.9
	1902	195,934,190	24,777,041	7,440,508	1,244,114	290,468,429	495,148				
Petroleum and natural gas	1909	34,333,531	41,391,608	21,282,820	15,700,864	175,527,807	1,221,969	63.8	85.7	72.0	21.1
	1902	20,962,116	24,320,573	11,463,786	17,389,696	102,034,590	1,008,710				
METALS:											
Iron	1909	33,121,418	17,229,717	15,174,735	2,698,842	106,947,082	346,534	40.1	193.3	63.4	233.3
	1902	23,641,599	8,973,168	6,503,908	422,644	65,460,985	103,974				
Copper	1909	45,060,017	23,104,451	259,245	406,999	99,493,799	297,769	96.6	99.1	94.4	54.1
	1902	22,919,861	11,083,175	130,215	188,768	51,178,036	193,272				
Precious metals, total	1909	37,766,098	22,075,916	1,305,701	318,303	87,671,553	228,244	−8.2	−8.3	6.3	23.5
	1902	41,154,265	16,699,768	1,423,399	626,090	82,482,052	184,819				
Deep mines	1909	34,665,751	19,205,870	1,163,955	225,147	77,434,301	200,966	−11.1	−8.9	9.4	15.5
	1902	39,011,089	15,908,782	1,277,632	606,137	77,154,326	173,961				
Placer mines	1909	3,100,347	2,870,046	141,716	93,156	10,237,252	27,278	44.7	−2.8	92.2	153.2
	1902	2,143,176	790,986	145,767	19,953	5,327,726	10,858				
Lead and zinc	1909	11,190,925	6,895,892	2,301,350	166,985	28,568,547	109,544	117.1	56.9	95.7	178.2
	1902	5,155,598	2,511,657	1,525,368	108,607	14,600,177	39,374				
Quicksilver	1909	486,125	185,378	5,268	4,197	868,458	784	−58.1	−25.6	−44.0	−55.1
	1902	1,035,494	322,267	7,078	23,164	1,550,099	1,748				
Manganese	1909	17,088	3,959			20,435	175	−79.7		−88.5	−30.6
	1902	84,319	17,228	1,996		177,911	254				
Tungsten	1909	211,486	94,203	1,375	2,400	563,457	486	16,684.6		9,399.2	129.9
	1902	1,260	210			5,975	220				
STRUCTURAL MATERIALS:											
Limestone	1909	22,860,012	11,992,659	549,096	254,312	47,784,479	152,651	38.6	29.9	57.8	141.6
	1902	16,496,501	5,378,932	422,693	36,381	30,278,877	63,182				
Granite and traprock	1909	15,067,755	3,976,162	476,850	123,808	24,576,293	90,306	23.8	144.7	36.2	94.5
	1902	12,168,784	2,447,761	194,892		18,042,943	46,441				
Sandstone	1909	5,352,818	1,389,149	154,513	44,340	9,290,829	36,556	−23.7	−24.4	−15.2	32.6
	1902	7,011,437	1,328,466	204,517	600	10,954,634	27,575				
Marble	1909	3,462,130	806,016	47,911	27,344	6,239,129	21,779	35.6	−26.7	23.7	53.8
	1902	2,553,661	825,822	65,385		5,044,182	14,161				
Slate	1909	4,494,132	849,158	271,252	28,962	6,054,174	29,777	28.9	6.7	6.3	17.8
	1902	3,512,338	680,361	269,267		5,696,051	25,269				
MISCELLANEOUS:											
Asbestos	1909	41,329	23,520	45	400	65,140	380	279.9		41.0	261.9
	1902	10,878	8,233			46,200	105				
Asphaltum and bituminous rock	1909	173,106	79,757	1,517	15,546	466,461	828	35.4	−46.9	97.0	15.9
	1902	127,803	21,928	2,856	10,060	236,728	720				
Barytes	1909	110,493	28,224	14,232	3,576	224,766	262	−24.0	−47.9	10.6	138.2
	1902	145,444	7,772	27,300	1,000	203,154	110				
Bauxite	1909	230,759	55,289	6,909		670,829	1,565	148.1	230.6	423.2	150.8
	1902	92,993	40,019	2,090	500	128,206	624				
Buhrstones and millstones	1909	16,850	508	271		34,441		−61.9	−57.4	−42.4	
	1902	44,244	1,809	636		59,808					
Clay	1909	1,586,509	389,342	85,403	44,318	2,945,948	8,868	43.9	43.8	42.9	122.5
	1902	1,109,397	272,823	59,387	13,241	2,061,072	3,965				
Corundum and emery	1909	4,719	260	708		18,185		−87.8	−35.1	−82.6	
	1902	38,831	26,114	1,091		104,605	110				
Feldspar	1909	135,356	56,744	9,238	8,681	271,437	993	6.1	−12.7	8.4	−17.5
	1902	127,539	50,278	10,584		250,424	1,204				
Fluorspar	1909	193,118	59,109	1,917	949	288,509	1,179	40.6	−75.7	4.7	76.2
	1902	137,313	31,374	7,900	300	275,682	669				
Fuller's earth	1909	156,979	83,807	582	67	315,762	1,739	258.6		221.7	278.9
	1902	43,775	28,966		4,021	98,144	460				
Garnet	1909	44,654	25,286	6,850		101,920	315	−35.1	419.8	−23.3	−25.0
	1902	68,810	10,128	1,341		132,820	420				
Graphite	1909	186,083	105,523	5,765	4,000	344,130	2,647	94.5	1,008.7	51.3	244.2
	1902	95,653	51,840	520	900	227,568	769				
Grindstones and pulpstones	1909	174,268	114,032	3,348	25,597	413,296	1,648	54.7	67.1	−28.1	33.4
	1902	112,640	31,349	2,003		667,431	1,235				
Gypsum	1909	2,372,766	1,560,117	74,916	16,558	5,512,810	17,685	123.9	50.1	178.2	141.6
	1902	1,059,678	341,760	49,912	406	2,089,341	7,319				
Infusorial earth, tripoli, and pumice	1909	67,102	23,619	3,587	2,430	172,157	881	279.2	241.6	207.5	41.7
	1902	17,698	2,297	1,050		55,994	410				
Marl	1909	13,512	2,988			13,307	195	96.7		4.4	118.0
	1902	6,869	2,755			12,741	50				
Mica	1909	139,188	22,769	5,684		206,794	463	142.1	89.9	74.0	150.3
	1902	57,487	11,961	3,142		118,849	185				
Mineral pigments	1909	60,856	22,485	3,469	15,288	151,015	849	−61.9	−74.0	−58.2	−52.6
	1902	159,680	58,073	13,326		360,885	1,790				
Oilstones, scythestones, and whetstones	1909	74,967	11,558	1,061	6,622	206,028	448	74.0	122.4	80.5	132.1
	1902	43,077	7,662	475		113,968	193				
Phosphate rock	1909	3,306,651	2,259,025	345,568	251,549	10,781,192	50,526	66.6	62.7	119.0	257.2
	1902	2,285,297	799,414	212,350	157,402	4,922,943	14,144				
Precious stones	1909	134,841	31,461			315,464	199	15.5		−4.0	−27.8
	1902	116,704	17,781	437		328,450	150				
Quartz	1909	94,774	29,526	2,959	16,351	231,025	1,219	16.4	−61.3	23.3	60.4
	1902	81,406	19,592	7,638		187,294	760				
Sulphur and pyrite	1909	898,208	1,180,447	887	2,091	5,109,050	8,872	100.2	−87.4	439.4	49.5
	1902	448,760	217,262	7,048	3,587	947,089	5,935				
Talc and soapstone	1909	607,128	262,393	31,287	2,559	1,174,516	9,433	77.1	−0.2	3.2	139.1
	1902	342,796	125,932	31,364		1,138,167	3,945				

[1] Exclusive of governmental institutions and of the coke and cement industries, but including figures for the lime industry.
[2] Exclusive of duplications resulting from the use of the products of some enterprises as materials for others within the same industry.
[3] Exclusive of the amount paid to miners compensated by a share of the product for both years, and also of the wages of part-time employees for the petroleum and natural gas industry for 1909, which are included under "Contract work" in other tables for 1909.
[4] A minus sign (−) denotes decrease.
[5] The totals for all industries include, besides those specified, a few industries which could not be separately shown without disclosing the operations of individual operators. The value of products of those industries was less than 0.1 per cent of the total for all industries in 1909 and 0.3 per cent in 1902.

PRODUCING MINES, QUARRIES, AND WELLS—CAPITAL, EXPENSES, VALUE OF PRODUCTS, PERSONS ENGAGED

Table 27

	DIVISION AND STATE.	Number of operators.	Number of mines and quarries.	Number of wells.	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT. Total.	Services. Salaried officers of corporations, superintendents, and managers.	Services. Clerks and other salaried employees.	Services. Wage earners.	Supplies, materials, and fuel. Supplies and materials.	Supplies, materials, and fuel. Purchased ore and natural gas (duplication in product).	Supplies, materials, and fuel. Fuel and rent of power.
1	United States	[1] 19,915	18,164	166,320	[2] $3,380,525,841	$1,042,642,693	[3] $32,823,748	[3] $20,569,803	$586,774,079	$173,411,438	$29,318,316	$45,136,550
	GEOGRAPHIC DIVISIONS:											
2	New England	510	586	.....	27,950,080	14,696,118	603,790	293,492	9,814,166	1,847,736	.....	753,714
3	Middle Atlantic	6,333	3,903	71,122	919,992,103	315,473,663	8,066,471	5,961,915	204,902,523	47,736,970	3,164,839	7,327,680
4	East North Central	4,152	2,662	56,379	469,041,901	200,211,992	5,986,494	3,434,660	118,672,711	28,179,361	5,656,650	7,399,712
5	West North Central	2,300	2,603	3,450	321,757,330	101,600,234	2,570,135	1,789,303	50,566,348	15,005,588	1,919,554	5,190,869
6	South Atlantic	1,358	1,052	15,146	341,053,471	96,151,345	3,403,174	2,267,740	49,886,136	14,722,485	893,664	3,418,805
7	East South Central	830	1,109	1,110	145,088,421	46,133,257	2,217,067	1,413,822	20,443,806	5,386,232	170,135	1,912,689
8	West South Central	1,229	452	14,700	110,680,029	40,200,158	1,647,442	802,375	15,671,675	7,922,941	173,100	1,505,758
9	Mountain	1,972	3,728	97	709,074,649	166,586,458	4,803,504	3,004,691	82,081,073	32,190,652	14,577,714	14,509,236
10	Pacific	1,538	1,610	4,316	275,819,077	61,589,468	2,481,872	956,406	25,645,041	19,819,473	2,702,660	3,118,087
	NEW ENGLAND:											
11	Maine	97	102	.....	3,825,031	1,876,341	87,779	31,847	1,332,242	219,579	.....	84,683
12	New Hampshire	45	53	.....	1,546,503	1,204,966	45,619	7,869	926,352	100,931	.....	54,427
13	Vermont	137	182	.....	13,902,096	6,795,208	227,650	142,587	4,449,315	905,157	.....	362,438
14	Massachusetts	139	147	.....	5,054,093	2,987,175	153,683	59,675	1,966,907	303,698	.....	153,268
15	Rhode Island	21	27	.....	567,015	673,877	20,948	27,941	409,883	130,947	.....	26,991
16	Connecticut	71	75	.....	2,904,442	1,158,491	50,111	23,573	720,377	127,424	.....	71,917
	MIDDLE ATLANTIC:											
17	New York	1,351	752	11,342	45,171,232	9,087,708	495,776	212,080	4,717,595	1,886,937	65,656	585,161
18	New Jersey	131	151	.....	8,613,663	4,507,940	183,690	70,491	2,801,066	674,962	.....	319,329
19	Pennsylvania	4,851	3,000	59,780	866,207,208	300,977,955	7,387,005	5,670,335	197,473,862	45,175,071	3,099,183	6,423,190
	EAST NORTH CENTRAL:											
20	Ohio	1,876	964	35,067	161,324,529	53,852,530	1,749,762	1,025,222	26,769,229	7,360,280	5,376,075	892,671
21	Indiana	1,010	480	10,373	59,764,947	20,312,752	736,347	365,174	14,782,488	1,823,904	22,595	551,821
22	Illinois	915	759	10,918	116,959,707	68,718,121	2,058,102	1,054,553	40,378,727	8,472,837	101,980	1,325,880
23	Michigan	83	173	21	119,331,987	51,819,338	1,255,559	917,903	27,660,908	9,800,415	.....	4,193,347
24	Wisconsin	268	286	.....	11,660,731	5,508,751	186,724	71,748	3,081,359	721,925	156,000	435,993
	WEST NORTH CENTRAL:											
25	Minnesota	153	250	.....	176,950,369	38,574,180	694,277	874,463	11,907,049	6,736,806	.....	2,024,606
26	Iowa	373	431	.....	8,481,483	13,094,714	320,951	220,024	10,870,446	1,307,919	.....	221,740
27	Missouri	1,021	1,224	39	60,549,081	27,515,101	993,190	281,730	14,393,570	4,730,342	1,471,553	2,220,657
28	North Dakota	53	53	6	1,058,049	570,140	34,372	28,217	364,321	95,352	.....	12,835
29	South Dakota	39	43	3	32,697,991	5,154,263	113,100	94,028	3,224,675	1,054,532	55,139	421,048
30	Nebraska	18	20	.....	222,428	260,049	12,000	3,745	169,937	35,474	.....	22,019
31	Kansas	643	582	3,402	41,797,329	15,831,787	461,336	287,096	9,636,350	1,645,163	392,862	267,964
	SOUTH ATLANTIC:											
32	Delaware	9	9	.....	959,078	508,937	61,900	8,115	217,727	152,054	.....	26,378
33	Maryland	126	173	.....	25,109,678	5,000,157	196,609	131,838	3,339,082	478,555	.....	104,156
34	Virginia	150	244	.....	55,902,693	8,863,954	357,255	255,366	5,229,787	1,173,860	.....	484,527
35	West Virginia	798	718	15,146	219,466,909	71,347,031	2,107,617	1,631,267	35,980,736	11,647,711	893,664	1,212,825
36	North Carolina	118	130	.....	5,985,112	1,416,075	81,646	41,396	862,762	152,714	.....	103,319
37	South Carolina	29	32	.....	1,209,390	1,034,823	55,065	27,175	626,429	124,618	.....	117,899
38	Georgia	92	109	.....	11,475,710	2,064,236	146,888	43,018	1,278,159	254,021	.....	146,666
39	Florida	36	96	.....	20,794,901	5,909,532	366,194	129,505	2,350,854	738,946	.....	1,223,035
	EAST SOUTH CENTRAL:											
40	Kentucky	437	442	1,109	26,786,640	11,721,722	667,739	297,409	7,827,514	1,322,406	.....	218,489
41	Tennessee	216	365	1	33,819,977	11,969,257	609,021	379,267	7,358,583	1,571,612	41,959	645,376
42	Alabama	177	302	.....	85,081,804	22,442,278	941,207	737,146	14,257,709	2,492,214	128,176	1,048,824
	WEST SOUTH CENTRAL:											
43	Arkansas	96	146	62	7,200,417	4,309,211	162,502	75,965	3,026,140	368,207	.....	138,987
44	Louisiana	33	2	246	13,207,282	6,641,555	148,386	178,645	872,627	850,456	7,200	726,971
45	Oklahoma	864	212	12,113	70,696,411	21,071,609	972,829	369,728	7,775,413	4,897,176	130,587	384,136
46	Texas	236	92	2,279	19,575,969	8,177,783	303,725	178,037	3,997,495	1,798,102	35,313	255,614
	MOUNTAIN:											
47	Montana	373	543	.....	145,135,510	46,520,545	718,596	694,477	21,361,406	9,837,503	6,559,820	3,628,050
48	Idaho	174	370	.....	48,892,888	7,198,763	269,251	88,627	4,045,547	1,847,458	.....	356,199
49	Wyoming	66	95	21	9,505,365	9,053,407	255,635	191,772	6,266,787	1,385,594	.....	376,187
50	Colorado	672	1,575	76	144,639,558	38,630,288	1,441,869	671,071	18,463,296	5,459,666	4,930,144	1,955,984
51	New Mexico	98	285	.....	40,125,674	5,553,423	234,187	210,947	3,529,356	805,487	.....	203,033
52	Arizona	135	251	.....	119,772,781	28,608,216	577,885	440,205	13,502,760	5,559,367	1,370,391	5,603,989
53	Utah	188	235	.....	81,000,043	16,606,028	755,233	442,294	8,986,851	3,920,414	106,910	1,074,119
54	Nevada	266	374	.....	120,002,830	14,415,728	610,848	265,208	5,925,070	3,375,163	1,610,449	1,311,625
	PACIFIC:											
55	Washington	93	170	.....	13,074,691	7,800,722	213,198	131,468	5,891,007	843,025	.....	245,852
56	Oregon	116	161	.....	9,166,834	1,223,468	91,387	33,446	705,192	186,796	.....	96,592
57	California	1,329	1,279	4,316	253,577,552	52,565,278	2,177,287	791,492	19,049,442	18,789,652	2,762,660	2,775,643

[1] Exclusive of duplications, 307 operators having reported in two or more states. Such duplications have not been excluded in the totals for the several geographic divisions.

[2] Includes $59,468,780 which could not be distributed among the several states.

[3] In some cases the same operator conducted enterprises in two or more states, all such enterprises being managed through one central administrative office. In such cases it was impossible to assign the corporate officers and the central office force to any particular state; this was also the case in respect to contract work and taxes, which were reported in a lump sum for all properties. The total central office expenses were accordingly apportioned among the several states pro rata to the total expenses reported for each state and the estimated amounts of such administrative expenses were added to "Sundry expenses." In the totals for the United States, however, the number of officers and salaried employees, as well as their salaries, and the amount of contract work and taxes, appear under the proper heads. The amounts thus included in the item of "Sundry expenses" for individual states and distributed in the totals for the United States are as follows: Officers, $922,899; clerks, $645,399; taxes, $142,240; and contract work, $61,801.

IN MINING INDUSTRIES, LAND CONTROLLED, AND POWER, FOR THE UNITED STATES, BY STATES: 1909.

	EXPENSES OF OPERATION AND DEVELOPMENT—contd.					PERSONS ENGAGED IN MINING INDUSTRIES.							
	Miscellaneous.						Proprietors and officials.						
	Royalties and rent of mines.	Taxes.	Contract work.	Rent of offices and other sundry expenses.	Value of products.	Aggregate.	Total.	Proprietors and firm members	Salaried officers of corporations, superintendents, and managers.	Clerks and other salaried employees.	Wage earners Dec. 15, or nearest representative day.	Land controlled (acres).	Primary horsepower.
1	$63,973,585	[3] $17,796,763	[3] $28,887,898	[3] $43,950,513	$1,238,410,322	[4] 1,139,332	49,374	29,922	[4] 19,452	[4] 24,675	1,065,283	24,215,811	4,698,253
2	185,637	154,826	110,705	932,052	17,327,242	19,590	938	515	423	398	18,254	67,575	61,259
3	15,945,607	5,920,809	6,533,563	9,823,286	370,742,262	427,091	16,335	11,520	4,805	7,829	402,927	5,874,701	1,736,613
4	12,335,880	3,332,106	6,154,644	9,059,774	237,534,170	229,255	11,301	7,451	3,850	4,294	213,660	4,139,440	913,857
5	14,718,304	3,280,168	2,762,943	3,197,022	130,252,538	95,637	5,230	3,547	1,683	1,949	88,458	1,425,461	370,390
6	8,639,760	1,307,777	4,862,717	6,689,087	105,714,462	124,512	3,509	1,350	2,159	2,997	118,006	6,503,321	536,648
7	1,373,504	376,047	1,006,660	2,832,395	49,143,289	75,004	2,184	501	1,683	1,964	70,856	2,386,739	179,680
8	4,391,962	456,134	2,469,045	5,159,726	47,530,937	31,387	2,156	1,056	1,100	979	28,252	1,844,933	149,607
9	3,410,506	2,143,200	4,308,511	5,497,371	205,053,900	99,711	4,158	2,023	2,135	2,481	93,072	1,622,459	487,184
10	2,972,425	683,456	617,309	2,532,139	75,111,522	36,171	3,263	1,959	1,304	1,120	31,788	908,982	191,089
11	16,302	16,241	6,728	80,940	2,056,063	2,686	168	98	70	47	2,471	11,635	8,141
12	4,271	5,251	9,246	51,000	1,308,597	1,610	75	42	33	15	1,520	7,979	3,771
13	84,332	72,147	64,098	486,944	8,221,323	8,901	311	160	151	202	8,388	35,227	25,998
14	55,409	40,187	16,272	177,996	3,467,888	3,805	222	121	101	75	3,508	8,077	15,981
15	8,552	3,343	----------	36,272	897,606	737	37	18	19	23	677	629	2,350
16	16,771	17,657	13,761	98,900	1,375,765	1,851	125	76	49	38	1,690	3,878	6,298
17	465,454	173,989	513,042	872,009	13,334,975	14,230	2,641	2,294	347	286	11,303	485,579	101,759
18	101,026	47,354	44,489	256,533	8,347,501	7,176	227	96	131	148	6,801	26,909	18,048
19	15,379,127	5,699,466	5,976,032	8,694,684	349,059,786	405,685	13,457	9,130	4,327	7,395	384,833	5,332,313	1,613,800
20	3,667,382	856,766	2,970,544	3,184,599	63,767,112	62,874	4,333	3,064	1,269	1,356	57,185	2,135,777	294,783
21	595,274	176,369	295,982	962,798	21,934,201	31,292	3,259	2,628	631	474	27,559	522,176	95,059
22	3,579,472	287,460	2,376,956	3,082,154	76,658,974	86,389	2,643	1,425	1,218	1,310	82,436	990,389	225,390
23	4,048,606	1,948,756	470,205	1,524,079	67,714,479	42,133	680	118	562	1,056	40,397	452,602	272,891
24	445,146	62,755	40,957	306,144	7,459,404	6,567	386	216	170	98	6,083	36,466	24,954
25	10,731,959	2,824,161	2,157,108	623,751	58,664,852	19,596	547	169	378	935	18,114	357,792	151,834
26	349,440	43,574	40,836	319,784	13,877,781	19,904	668	423	245	226	19,010	81,458	23,453
27	1,954,092	158,086	162,084	1,149,797	31,667,525	32,462	2,450	1,783	667	336	29,676	339,677	109,572
28	10,647	4,300	1,325	18,771	564,812	960	79	51	28	21	860	24,995	2,025
29	4,776	102,063	50	84,843	6,432,417	3,987	75	31	44	46	3,866	31,923	15,643
30	1,551	414	5,593	8,416	322,517	527	28	16	12	5	494	1,393	815
31	1,665,839	147,570	395,947	991,660	18,722,634	18,201	1,383	1,074	309	377	16,441	596,866	66,943
32	4,392	1,624	5,800	30,947	516,213	671	30	9	21	13	628	642	1,460
33	133,786	88,559	8,303	524,669	5,782,045	8,201	279	101	178	177	7,745	109,419	18,118
34	418,353	150,074	119,028	675,698	8,795,646	17,596	329	86	243	374	16,893	294,416	34,930
35	7,796,172	965,443	4,465,926	4,556,270	76,287,889	82,808	2,236	909	1,327	2,168	78,404	5,569,353	418,282
36	20,212	7,565	37,386	109,075	1,358,617	3,094	231	165	66	38	2,825	75,296	6,962
37	10,336	10,783	6,680	55,838	1,252,792	2,079	45	13	32	20	2,014	47,999	7,012
38	58,717	13,236	1,903	121,628	2,874,595	4,267	186	58	128	67	4,014	136,129	20,606
39	197,792	70,493	217,691	614,962	8,845,665	5,796	173	9	164	149	5,483	270,167	42,206
40	422,579	96,122	184,903	684,561	12,100,075	23,393	870	338	532	490	22,033	710,696	53,293
41	617,097	94,575	54,372	597,395	12,692,547	18,968	482	87	395	458	18,028	607,131	34,520
42	333,828	185,350	767,385	1,550,439	24,350,667	32,643	832	76	756	1,016	30,795	850,972	91,994
43	193,990	18,084	117,195	208,141	4,603,845	6,739	215	75	140	102	6,422	110,526	14,660
44	496,198	67,501	62,440	3,222,131	6,547,050	1,163	131	72	59	79	953	102,251	8,445
45	2,783,975	308,216	2,137,314	1,312,185	25,637,892	15,842	1,349	648	701	573	13,920	1,211,800	95,074
46	917,799	62,333	152,096	417,269	10,742,150	7,643	461	261	200	225	6,957	420,283	32,903
47	1,822,875	453,386	394,499	1,049,933	54,991,961	21,791	769	504	265	519	20,503	119,642	174,389
48	27,632	158,145	23,036	382,868	8,649,342	3,940	284	169	115	64	3,592	46,920	28,273
49	107,834	61,409	61,542	346,707	10,572,188	8,953	306	202	104	178	8,469	85,550	30,326
50	1,017,447	542,972	2,996,083	1,151,756	45,660,135	26,753	1,411	647	764	693	24,769	213,875	98,771
51	78,995	40,410	132,535	318,423	5,587,744	6,112	219	86	134	229	5,682	397,174	18,942
52	8,256	431,829	238,982	874,462	34,217,651	14,104	301	100	201	352	13,451	44,217	47,272
53	71,911	211,920	265,066	771,310	22,053,282	11,735	390	102	288	341	11,004	74,650	47,226
54	275,556	243,129	196,768	601,912	23,271,597	6,263	487	213	274	294	5,572	38,491	26,962
55	141,231	93,593	14,462	226,886	10,537,556	7,653	162	48	114	148	7,343	107,989	20,742
56	16,935	12,917	7,717	72,486	1,191,512	1,299	174	112	62	38	1,087	33,706	5,079
57	2,814,259	576,946	595,130	2,232,767	63,382,454	27,219	2,927	1,799	1,128	994	25,298	827,283	162,296

[4] The following numbers of persons, which could not be distributed by states, are included under the proper headings in the United States totals: Aggregate, 974; salaried officers of corporations, superintendents, and managers, 310; and clerks, 664.

PRODUCING MINES, QUARRIES, AND WELLS—LAND CONTROLLED, CAPITAL, EXPENSES, VALUE OF PRODUCTS,

Table 28

	INDUSTRY.	Number of operators.	Number of mines, quarries, and wells.	Land controlled (acres).	Capital.	EXPENSES OF OPERATION AND DEVELOPMENT.						
						Total.	Services.			Supplies, materials, and fuel.		
							Salaried officers of corporations, superintendents, and managers.	Clerks and other salaried employees.	Wage earners.	Supplies and materials.	Purchased ore and natural gas (duplication in product).	Fuel and rent of power.
1	**All industries (U. S.)**	19,915	.....	24,215,611	$3,380,525,841	$1,042,642,693	$32,823,748	$20,569,803	$586,774,079	$173,411,438	$29,318,316	$45,136,550
	FUELS:											
2	Coal, anthracite	192	423	465,134	246,928,078	139,324,467	2,317,223	2,266,081	92,317,659	23,504,740	.....	3,193,226
3	Coal, bituminous	3,503	6,013	7,717,615	1,002,197,083	395,907,026	12,724,418	9,076,477	294,190,488	40,064,899	433,801	7,509,947
4	Petroleum and natural gas	7,793	166,320	12,694,838	683,268,497	135,638,644	4,848,224	2,393,657	27,091,650	39,947,013	9,888,877	1,444,595
5	Peat	10	10	1,629	318,024	96,034	17,178	3,018	40,313	6,490	.....	17,974
	METALS:											
6	Iron	176	483	1,313,214	300,735,917	74,071,830	1,749,089	1,639,973	29,731,456	12,597,428	.....	4,632,289
7	Copper	161	368	275,598	301,896,296	107,679,212	1,928,167	1,785,861	49,382,979	23,718,373	10,596,964	13,324,157
	Precious metals—											
8	Deep mines	1,604	2,845	374,685	443,715,258	68,764,692	2,816,906	980,474	30,868,371	14,100,617	6,451,627	5,105,253
9	Placer mines	678	880	213,578	56,840,870	6,810,482	359,376	71,397	2,669,574	2,194,444	.....	675,502
10	Lead and zinc	977	1,142	125,322	62,627,935	24,453,209	896,722	195,844	10,477,657	4,836,023	1,947,047	2,400,724
11	Quicksilver	12	12	22,837	2,718,812	718,861	63,441	15,140	407,544	130,847	.....	54,531
12	Manganese	3	8	3,457	960,000	21,725	4,620	480	11,088	3,461	.....	498
13	Tungsten	22	116	7,624	1,468,428	365,780	29,901	3,240	178,345	85,555	.....	8,648
14	STRUCTURAL MATERIALS	3,988	4,603	341,695	[1] 132,641,780	63,041,585	[2] 3,642,297	[2] 1,504,442	39,661,871	8,800,184	.....	3,482,054
15	Limestone	1,665	1,916	128,495	44,089,476	23,875,507	1,227,758	490,238	14,082,185	3,754,125	.....	1,507,628
16	Granite	707	826	51,398	25,422,307	16,192,138	741,171	328,361	11,112,195	1,921,912	.....	757,078
17	Sandstone	595	677	65,580	15,758,455	6,626,438	398,383	132,086	3,993,340	909,955	.....	319,961
18	Marble	77	108	43,445	20,272,755	4,842,835	281,018	102,089	3,079,023	544,327	.....	261,689
19	Slate	185	219	19,897	12,177,350	5,831,256	306,899	98,580	4,088,653	521,761	.....	327,397
20	Traprock	196	220	18,085	8,745,553	5,090,538	244,777	102,317	2,538,964	1,018,090	.....	279,082
21	Bluestone	563	637	14,795	1,299,789	1,182,873	53,052	8,446	767,511	130,014	.....	29,219
	MISCELLANEOUS:											
22	Asbestos	5	20	3,045	88,000	72,747	7,940	2,200	31,189	23,120	.....	400
23	Asphaltum and bituminous rock	12	19	7,137	2,557,273	[3] 301,673	39,809	4,320	128,977	66,159	.....	13,598
24	Barytes	23	42	14,079	472,751	176,967	13,623	6,560	90,310	21,756	.....	6,468
25	Bauxite	10	10	14,214	3,023,414	316,221	24,878	7,608	198,273	21,665	.....	33,624
26	Buhrstones and millstones	14	14	506	9,685	18,354	225	.....	10,025	483	.....	25
27	Clay	261	336	59,053	6,780,077	2,289,198	180,803	44,024	1,361,022	280,953	.....	108,389
28	Corundum and emery	4	6	1,553	316,909	7,459	1,044	.....	3,075	260	.....	.....
29	Feldspar	22	28	3,556	505,769	238,896	25,367	3,336	106,653	40,852	.....	15,892
30	Fluorspar	13	15	3,434	195,215	319,426	19,640	5,024	108,445	34,695	.....	24,414
31	Fuller's earth	16	21	6,644	1,362,427	274,776	33,880	4,470	118,620	35,797	.....	48,010
32	Garnet	3	4	5,396	181,858	98,206	3,550	900	40,204	19,491	.....	5,795
33	Graphite	19	20	5,084	1,505,703	328,690	23,588	2,426	160,069	69,601	.....	35,922
34	Grindstones	13	25	2,604	304,324	339,261	20,572	5,373	148,323	99,470	.....	14,562
35	Gypsum	78	222	54,215	10,213,284	4,905,062	288,954	262,035	1,820,877	986,058	.....	573,459
36	Infusorial earth	14	16	2,305	147,000	61,083	4,990	120	27,627	4,432	.....	9,235
37	Magnesite	6	13	2,369	89,016	62,444	5,338	2,105	32,479	6,282	.....	7,556
38	Marl	3	3	2,250	70,140	17,812	2,895	1,030	9,587	1,463	.....	1,525
39	Mica	73	78	12,255	1,261,780	182,828	13,570	960	124,658	10,377	.....	12,392
40	Mineral pigments	23	26	1,337	386,501	115,860	15,082	1,800	43,974	14,710	.....	7,775
41	Monazite and zircon	4	4	50,550	63,000	50,909	3,100	600	5,046	1,750	.....	770
42	Oilstones, scythestones, and whetstones	21	45	3,928	247,478	99,259	4,083	1,000	69,884	4,957	.....	6,601
43	Phosphate rock	51	153	340,697	30,642,656	7,421,430	430,523	160,467	3,215,661	898,657	.....	1,360,368
44	Precious stones	23	27	2,858	701,945	195,908	36,169	2,700	95,972	30,449	.....	1,012
45	Pumice	3	4	320	4,400	6,087	.....	90	4,778	539	.....	.....
46	Pyrite	11	12	9,179	1,717,410	734,355	34,573	20,320	408,419	152,143	.....	71,537
47	Quartz	14	14	1,877	343,883	155,418	10,447	2,679	81,648	17,461	.....	12,065
48	Sulphur	4	4	6,747	5,203,900	4,538,389	64,200	46,059	324,538	248,383	.....	708,384
49	Talc and soapstone	39	46	11,576	8,659,744	1,036,371	71,334	31,678	504,110	196,054	.....	66,339
50	Tripoli	4	7	874	170,800	42,493	6,000	840	22,657	7,407	.....	2,006
51	ALL OTHER INDUSTRIES [4]	10	27	27,843	6,891,550	740,874	38,950	12,086	373,269	125,340	.....	138,929

[1] Includes $4,876,005 which can not be distributed among the several industries.

[2] In some cases the same operator conducted two or more quarries producing different kinds of stone, all quarries being managed through one central administrative office. In such instances it was impossible to assign the corporate officers and the central office force to any particular quarry; this was also the case in respect to taxes, which were reported in a lump sum for all properties. The total central office expenses were accordingly apportioned among the several industries in proportion to the total expenses of each, and the estimated amounts of such administrative expenses were added to "Sundry expenses" for each industry. In the totals for "Structural materials," however, the number of officers and salaried employees, as well as their salaries, and the amount of taxes, appear under the proper heads. The amounts thus included in the item of "Sundry expenses" for individual industries and distributed in the totals for "Structural materials" are as follows: Officers, $389,230; clerks, $242,325; and taxes, $27,767.

PERSONS ENGAGED IN MINING INDUSTRIES, AND POWER, FOR THE UNITED STATES, BY INDUSTRIES: 1909.

	Expenses of operation and development—continued.							Value of products.	Persons engaged in mining industries.							Primary horsepower.
	Miscellaneous.				Per cent of total.				Aggregate.	Proprietors and officials.				Clerks and other salaried employees.	Wage earners Dec. 15, or nearest representative day.	
										Total.	Proprietors and firm members.		Salaried officers of corporations, superintendents, and managers.			
	Royalties and rent of mines.	Taxes.	Contract work.	Rent of offices and other sundry expenses.	Services.	Supplies.	Miscellaneous.				Total.	Number performing manual labor.				
1	$63,973,585	$17,796,763	$28,887,898	$43,950,513	61.4	23.8	14.8	$1,238,410,322	1,139,332	49,374	29,922	8,861	19,452	24,675	1,065,283	4,608,253
2	7,980,739	2,681,877	1,701,514	3,361,408	69.5	19.2	11.3	149,180,471	178,004	1,315	188	72	1,127	3,185	173,504	676,733
3	12,082,488	4,481,816	2,209,672	13,127,020	79.8	12.1	8.1	427,962,464	592,677	11,620	3,739	1,713	7,881	11,268	569,789	1,227,481
4	21,282,820	2,576,986	16,736,510	9,428,312	25.3	37.8	36.9	185,416,684	62,172	19,353	16,213	2,155	3,140	2,988	39,831	1,221,989
5	800	907	....	9,354	63.0	25.5	11.5	109,047	203	15	1	....	14	6	182	1,416
6	15,174,735	3,970,355	2,698,842	1,876,763	44.7	23.3	32.0	106,947,082	55,176	1,109	76	24	1,033	1,837	52,230	346,534
7	1,789,656	1,934,158	644,562	2,574,335	49.3	44.2	6.5	134,616,987	55,258	661	79	42	582	1,454	53,143	376,464
8	1,163,985	1,084,576	3,603,984	2,588,899	50.4	37.3	12.3	83,885,928	37,755	3,359	2,011	951	1,348	780	33,616	209,966
9	141,716	119,369	99,582	479,422	45.5	42.2	12.3	10,237,252	5,436	1,149	951	673	198	88	4,199	27,278
10	2,301,850	167,188	197,259	1,032,985	47.3	37.6	15.1	31,363,094	24,397	2,525	1,947	1,171	578	209	21,663	116,559
11	5,268	6,957	9,878	25,255	67.6	25.8	6.6	868,458	640	27	3	....	24	15	598	784
12	....	678	....	....	78.7	18.2	3.1	20,435	65	7	4	1	3	1	57	175
13	1,375	3,213	40,976	14,527	57.8	25.8	16.4	563,457	227	45	32	20	13	5	177	486
14	1,439,445	[2] 496,235	463,590	[2] 4,151,467	70.4	19.3	10.3	75,992,908	[3] 101,129	[3] 6,744	4,106	1,827	[3] 2,638	[3] 2,035	92,350	303,442
15	488,919	161,117	201,880	1,961,657	66.2	22.0	11.8	29,832,492	41,029	2,645	1,634	640	1,011	489	37,895	126,024
16	194,349	113,097	65,744	958,231	75.2	16.6	8.2	18,997,976	22,211	1,248	730	318	518	402	20,561	61,065
17	97,604	53,075	73,359	648,675	68.3	18.5	13.2	7,702,423	11,025	913	587	215	326	204	9,908	33,487
18	47,911	70,616	27,344	428,818	71.5	16.6	11.9	6,239,120	6,649	188	49	6	139	148	6,313	21,779
19	271,252	33,192	28,962	154,560	77.1	14.5	8.4	6,054,174	10,121	499	221	70	278	184	9,438	23,777
20	282,501	32,301	60,204	532,302	56.7	25.5	17.8	5,578,317	6,748	317	116	22	201	171	6,260	29,211
21	56,909	5,070	6,097	126,555	70.0	13.5	16.5	1,588,406	3,020	827	769	556	58	18	2,175	3,069
22	45	846	400	6,607	56.8	32.3	10.9	65,140	88	5	....	....	5	4	79	380
23	1,517	5,694	15,546	26,053	57.4	26.4	16.2	466,461	241	20	....	....	20	6	215	828
24	14,232	1,967	14,346	7,705	62.5	15.9	21.6	224,766	372	35	23	11	12	7	330	282
25	6,909	3,993	....	19,271	73.0	17.5	9.5	670,829	726	27	1	....	26	9	690	1,565
26	271	28	....	697	91.8	2.8	5.4	34,441	79	19	18	15	1	....	60	....
27	85,403	25,147	48,068	154,729	69.3	17.0	13.7	2,945,948	4,351	404	244	77	160	76	3,871	8,808
28	708	11	....	1,761	63.3	3.5	33.2	18,185	19	2	....	....	2	....	17	....
29	9,238	1,473	8,681	27,404	56.7	23.7	19.6	271,437	363	28	11	7	17	10	325	993
30	1,917	1,012	949	63,321	60.5	18.5	21.0	288,509	376	27	8	4	19	7	342	1,179
31	582	2,863	67	30,478	57.1	30.5	12.4	315,762	380	27	3	3	24	8	345	1,739
32	6,850	4,869	....	16,547	45.5	25.7	28.8	101,920	120	7	5	2	2	1	112	315
33	5,765	3,401	4,000	23,918	56.6	32.1	11.3	344,130	436	26	2	2	24	6	404	2,647
34	3,348	2,134	25,597	19,882	51.4	33.6	15.0	413,296	430	16	5	2	11	6	408	1,648
35	74,916	39,062	16,558	842,243	48.4	31.8	19.8	5,812,810	4,215	163	6	4	157	274	3,778	17,685
36	735	813	2,430	10,701	53.6	22.4	24.0	75,503	99	23	16	1	7	1	75	316
37	253	252	....	8,179	63.9	22.2	13.9	68,463	84	8	3	2	5	2	74	126
38	....	247	....	1,065	75.8	16.8	7.4	13,307	38	7	4	....	3	2	29	165
39	5,684	852	6,036	8,299	76.1	12.5	11.4	206,794	608	133	116	63	17	2	473	463
40	3,469	1,255	20,388	7,407	52.5	19.4	28.1	151,015	246	35	20	2	15	2	209	849
41	100	303	36,500	2,740	17.2	5.0	77.8	64,472	34	8	6	....	2	1	25	45
42	1,061	1,211	6,622	3,840	75.5	11.7	12.8	206,028	232	25	19	9	6	1	206	448
43	345,568	86,859	251,849	671,478	51.3	30.4	18.3	10,781,192	8,573	214	17	....	197	173	8,186	50,526
44	....	1,746	....	27,860	68.8	16.1	15.1	315,464	145	33	5	....	28	5	107	109
45	190	....	....	490	80.0	8.8	11.2	30,097	25	5	5	3	....	2	18	....
46	887	6,145	2,730	37,592	63.1	30.5	6.4	676,984	1,160	22	4	....	18	27	1,111	5,758
47	2,959	1,512	16,351	10,296	61.0	19.0	20.0	231,025	208	18	7	....	11	6	184	1,219
48	....	53,606	361	3,092,768	9.6	21.1	69.3	4,432,066	460	13	....	....	13	39	408	3,114
49	31,287	15,501	3,550	116,512	58.6	25.3	16.1	1,174,516	1,452	64	16	2	48	52	1,336	9,423
50	2,662	713	....	208	69.4	22.1	8.5	66,557	73	11	4	....	7	2	60	265
51	2,152	8,933	500	40,715	57.3	35.7	7.0	778,938	560	20	4	3	16	13	527	3,141

[3] The following numbers of persons, which could not be distributed among the several industries, are included under the proper headings in the totals for building stone: Aggregate, 326; officers of corporations, 107; and clerks, 219.
[4] Includes enterprises as follows: Antimony, 1; bismuth, 1; borax, 2; chromite, 2; manganiferous iron, 2; nickel and cobalt, 1; and tin, 1.

NONPRODUCING MINES, QUARRIES, AND WELLS—PERSONS ENGAGED IN MINING INDUSTRIES, LAND CONTROLLED, POWER, CAPITAL, AND EXPENSES: 1909.

Table 29

INDUSTRY.	Number of operators.	Number of mines, quarries, and wells.	PERSONS ENGAGED IN MINING INDUSTRIES.						Land controlled (acres).	Primary horsepower.	Capital.
			Aggregate.	Proprietors and officials.			Clerks and other salaried employees.	Wage earners Dec. 15, or nearest representative day.			
				Total.	Proprietors and firm members.						
					Total.	Number performing manual labor.	Officials.				
All industries (United States)	3,749	.....	27,616	5,494	3,769	1,076	1,725	623	21,499	1,969,067	91,657	$282,001,223
FUELS:											
Coal, anthracite	6	6	327	6	.....	.....	6	.....	321	513	1,945	22,728
Coal, bituminous	38	55	705	50	9	5	41	30	685	89,700	2,609	9,402,665
Petroleum and natural gas	200	[1] 128	1,917	396	207	19	189	70	1,451	1,115,101	8,577	14,166,314
METALS:											
Iron	20	21	804	23	5	2	18	28	753	30,420	3,471	4,850,539
Copper	13	13	799	39	.....	.....	39	54	706	15,579	4,248	11,073,777
Precious metals:											
Deep mines	3,078	8,352	20,453	4,426	3,135	881	1,291	399	15,628	598,832	59,224	233,123,939
Placer mines	132	102	772	199	152	103	47	5	568	54,154	5,001	3,364,271
Lead and zinc	63	71	494	150	123	28	27	8	336	4,737	3,486	1,094,711
Quicksilver	18	28	139	27	19	9	8	1	111	9,139	120	893,800
Manganese	5	9	42	9	6	.....	3	.....	33	4,016	248	105,650
Tungsten	12	84	109	14	7	.....	7	1	94	3,470	127	459,602
STRUCTURAL MATERIALS:											
Limestone	9	9	159	19	17	.....	2	4	136	3,024	879	273,121
Granite	3	3	18	6	5	.....	1	.....	12	76	.....	13,990
Marble	11	20	81	19	13	.....	6	1	61	4,136	206	486,352
Slate	9	10	94	16	12	5	4	.....	78	395	390	166,081
MISCELLANEOUS:											
Asbestos	5	76	25	4	.....	1	4	2	19	2,455	.....	264,734
Clay	6	6	46	16	14	1	2	.....	30	973	20	34,760
Fluorspar	3	3	14	4	3	.....	1	.....	10	147	10	116,500
Graphite	5	6	35	6	1	3	5	3	26	11,005	85	258,018
Gypsum	4	6	25	4	3	2	1	.....	21	1,230	10	46,741
Mica	4	4	29	5	3	3	2	.....	24	165	.....	13,708
Oilstones, scythestones, and whetstones	4	4	13	6	6	1	.....	.....	7	240	50	2,600
Phosphate rock	5	33	137	8	2	4	6	2	127	3,765	455	132,000
Precious stones	7	11	27	11	11	2	.....	.....	16	261	.....	22,125
ALL OTHER INDUSTRIES [2]	29	54	292	31	16	7	15	15	246	15,534	496	1,612,197

INDUSTRY.	EXPENSES OF OPERATION AND DEVELOPMENT.							
	Total.	Services.			Supplies, materials, and fuel.		Contract work.	Miscellaneous expenses.
		Salaried officers of corporations, superintendents, and managers.	Clerks and other salaried employees.	Wage earners.	Supplies and materials.	Fuel and rent of power.		
All industries (United States)	$31,548,736	$2,092,650	$302,277	$12,931,010	$10,877,732	$1,366,862	$1,802,560	$2,084,745
FUELS:								
Coal, anthracite	263,501	7,151	3,009	173,438	58,956	2,563	1,351	17,033
Coal, bituminous	748,867	37,795	14,878	229,028	164,677	2,137	214,310	86,042
Petroleum and natural gas	7,044,383	191,155	25,543	1,002,383	4,937,764	198,552	303,162	385,824
METALS:								
Iron	862,301	18,068	15,902	316,530	237,882	83,074	63,775	126,410
Copper	900,252	57,882	34,556	475,123	167,906	75,113	12,698	76,974
Precious metals—								
Deep mines	20,321,074	1,630,738	276,360	10,086,470	5,017,908	951,148	1,089,536	1,268,914
Placer mines	506,426	49,685	1,375	243,336	145,138	6,219	27,487	33,186
Lead and zinc	241,450	16,501	2,712	86,442	39,205	24,161	63,336	9,093
Quicksilver	96,904	7,050	900	69,354	10,367	1,970	.....	7,263
Manganese	19,167	2,203	.....	12,324	2,168	1,262	.....	1,210
Tungsten	83,877	15,412	816	42,204	14,900	505	.....	9,920
STRUCTURAL MATERIALS:								
Limestone	77,112	874	2,592	22,012	42,424	679	4,420	3,511
Granite	4,574	600	.....	2,305	1,510	.....	.....	69
Marble	43,531	7,380	600	19,054	8,379	2,200	1,800	4,112
Slate	29,175	3,890	.....	19,532	2,625	2,427	.....	701
MISCELLANEOUS:								
Asbestos	30,893	8,177	1,420	14,311	1,422	.....	.....	11,563
Clay	6,996	900	.....	3,773	1,000	.....	40	1,283
Fluorspar	4,218	1,320	.....	2,010	449	245	.....	194
Graphite	62,801	11,100	1,508	14,577	2,225	108	11,028	22,255
Gypsum	6,200	120	.....	4,130	1,035	5	.....	400
Mica	5,343	600	2,378	708	1,102	.....	500	55
Oilstones, scythestones, and whetstones	1,805	.....	.....	937	165	70	.....	633
Phosphate rock	37,567	4,825	350	24,073	1,421	3,828	.....	2,470
Precious stones	2,227	.....	.....	1,811	301	.....	.....	115
ALL OTHER INDUSTRIES [2]	142,002	19,224	7,318	64,755	16,143	9,930	9,117	15,515

[1] Exclusive of wells not completed on Dec. 31, 1909.

[2] Includes enterprises as follows: Antimony, 1; asphaltum and bituminous rock, 2; bluestone, 1; borax, 1; chromite, 1; feldspar, 1; garnet, 1; grindstones, 1; infusorial earth, 1; lithographic stone, 2; lithium, 1; magnesite, 1; mineral pigments, 2; molybdenum, 4; monazite and zircon, 1; peat, 2; pyrite, 1; quartz, 1; tin, 1; titanium, 1; uranium, 1; and vanadium, 1.